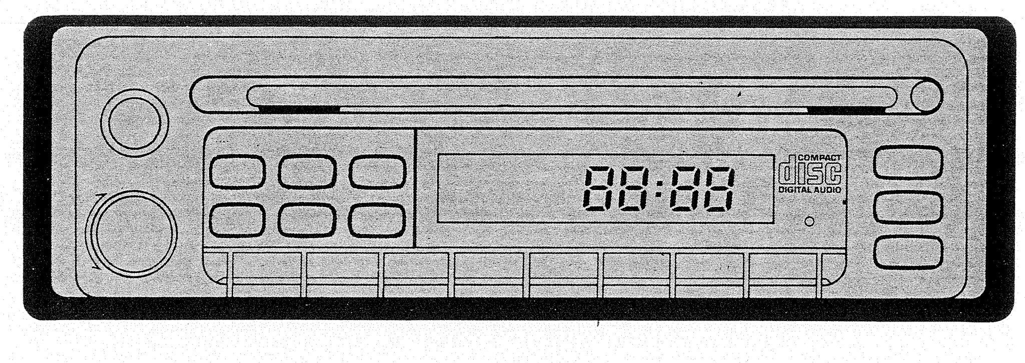
Roadstar®
AUTO-HiFi

Service Manual

CD-695GB

CAR RADIO
COMPACT DISC PLAYER


88:88
COMPACT
disc
DIGITAL AUDIO

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SPECIFICATIONS

■ AM RADIO

• Frequency Range	522～1620 kHz
• I.F.	450 kHz
• Usable Sensitivity	30 dB
• Maximum Sensitivity	20 dB
• S/N Ratio	45 dB
• I.F. Rejection	50 dB
• Image Rejection	45 dB
• Selectivity	30 dB
• Maximum Power Output	16 W
• 10% T.H.D. Power Output	12 W
• T.H.D.	1 %
• Frequency Response	63～3000 Hz

■ FM RADIO

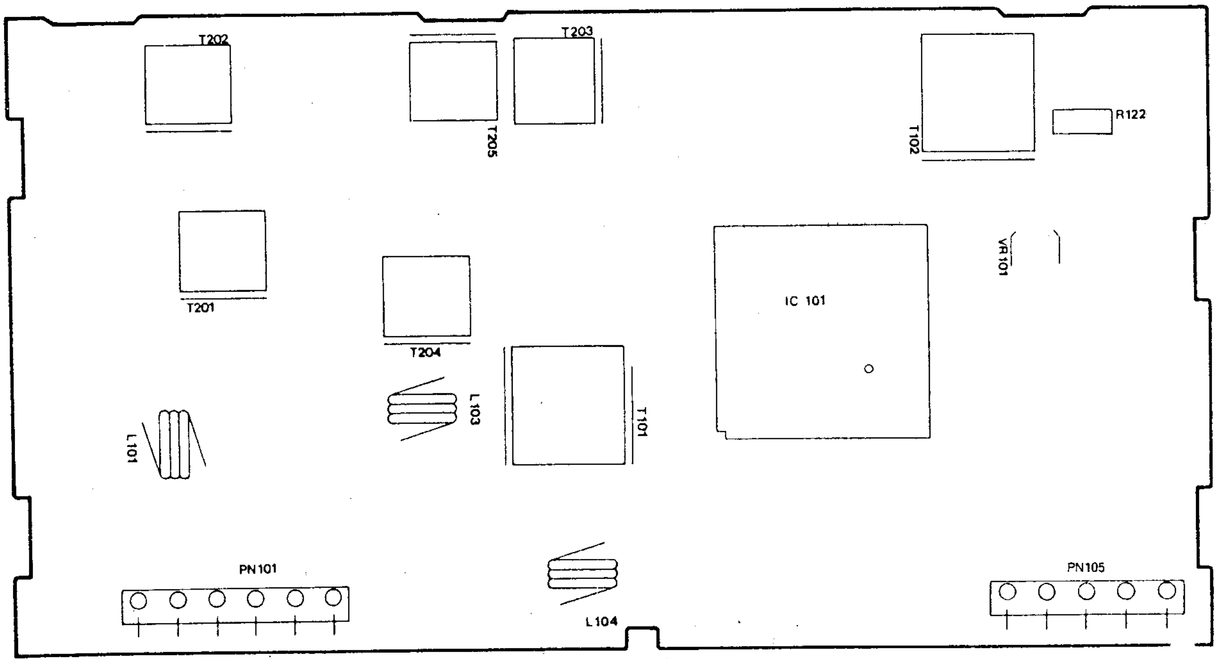
• Frequency Range	87.5～108 MHz
• I.F.	10.7 MHz
• Usable Sensitivity	12 dB
• S/N Ratio	55 dB
• Image Rejection	50 dB
• I.F. Rejection	70 dB
• T.H.D.	1 %
• Frequency Response	80～15000 Hz
• Stereo Separation	28 dB
• Maximum Power Output	16 W
• 10% T.H.D. Power Output	12 W

■ CD PLAYER

• Access Time	1～7 Sec
• Lead-In Time	10 Sec
• Black Dot	800 μm
• Interruption	800 μm
• Eccentricity	210 μm
• Vertical Deviation	1.0 mm
• Ejecting Time	6 Sec
• Anti-Vibration	1.0 G
• Frequency Response	±1.5 dB
• Channel Separation (100 Hz/1 kHz 10 kHz)	45/50/35 dB
• S/N	60 dB
• T.H.D. (100 Hz/1 kHz/20 kHz)	1/0.5/0.5 dB
• 10 % T.H.D. Power	12 dB
• Line Out	400 mV
• Line Out T.H.D.	0.3 %

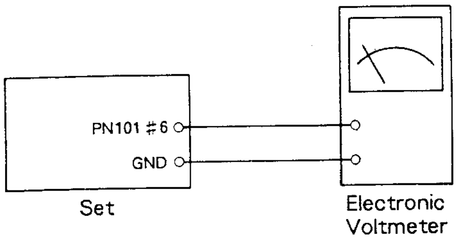
TUNER ADJUSTMENTS

●Test & Adjustment Points


T202
T203
T205
T102
R122
VR101
T201
T204
IC 101
L103
T101
L101
PN101
PN105
L104

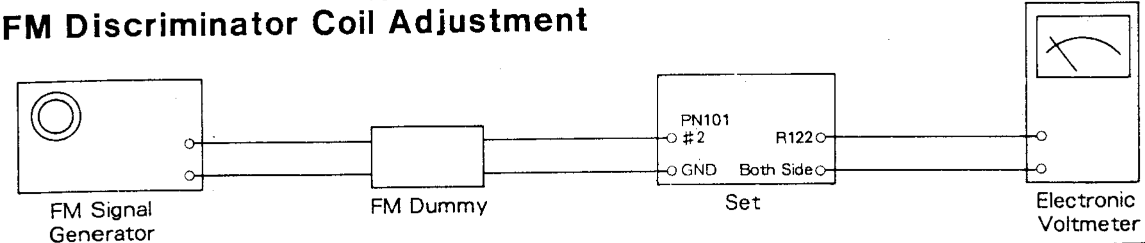
— Tuner P.C. Board —

●FM Tuning Voltage Adjustment


PN101 #6
GND
Set
Electronic Voltmeter

Frequency Display	Condition of Adjustment	Adjusting Part
87.5MHz	1.4 ±0.1V	L104

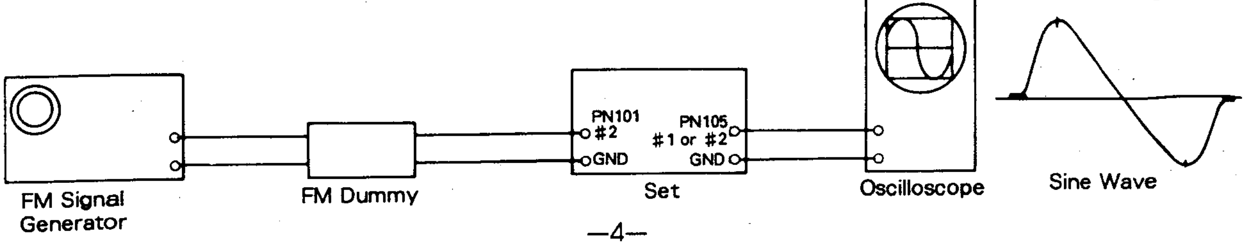
●FM Discriminator Coil Adjustment


FM Signal Generator
FM Dummy
PN101 #2
GND
R122
Both Side
Set
Electronic Voltmeter

Signal Generator	Frequency Display	Condition of Adjustment	Adjusting Part
98MHz, 60dB, 400Hz (22.5kHz Dev.)	98MHz	0.0V	T102

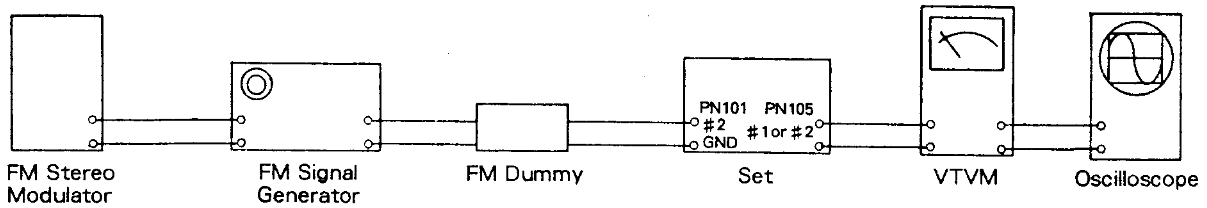
●FM RF Adjustment

Symmetrical in up-and-down direction with good linearity


FM Signal Generator
FM Dummy
PN101 #2
GND
PN105 #1 or #2
GND
Set
Oscilloscope
Sine Wave

Signal Generator	Frequency Display	Condition of Adjustment	Adjustment Parts
90 (106) MHz, 8~15dB, 400Hz (22.5kHz Dev.)	90MHz	Maximize the output	T101
	90 (106) MHz		L101, L103

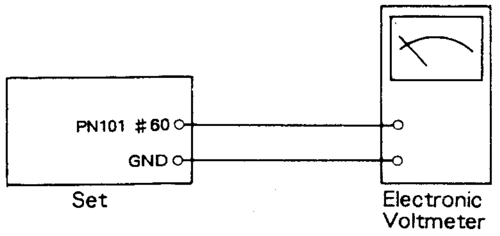
●FM Separation Adjustment



PN101 #2 GND
PN105 #1 or #2
FM Stereo Modulator
FM Signal Generator
FM Dummy
Set
VTVM
Oscilloscope

Stereo Modulator	Signal Generator	Frequency Display	Condition of Adjustment	Adjusting Parts
Signal : 90% Pilot : 10%	98MHz Stereo Signal 1kHz, 60dB (75kHz Dev.)	98MHz	Maximize the separation	T101
			Maximize the separation	VR101

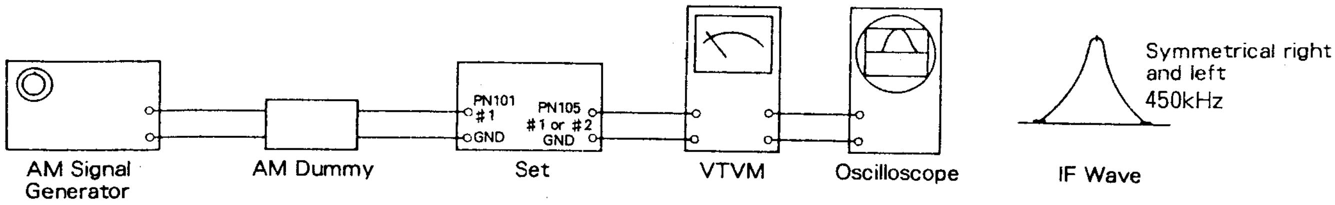
●AM Tuning Voltage Adjustment



PN101 #60
GND
Set
Electronic Voltmeter

Frequency Display	Condition of Adjustment	Adjustment Part
522kHz	1.3±0.1V	T203

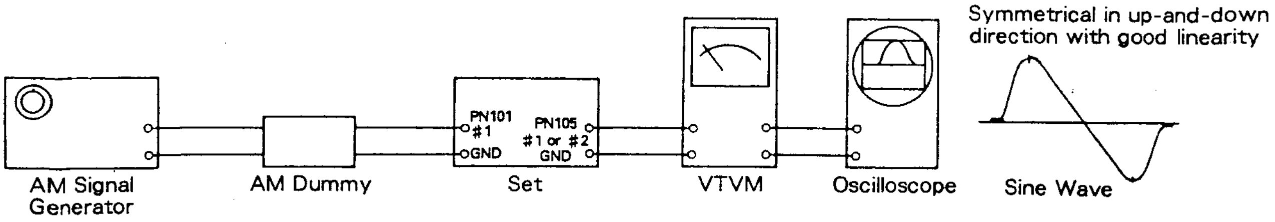
●AM IF Adjustment



PN101 #1 GND
PN105 #1 or #2 GND
AM Signal Generator
AM Dummy
Set
VTVM
Oscilloscope
Symmetrical right and left
450kHz
IF Wave

Signal Generator	Frequency Display	Condition of Adjustment	Adjustment Parts
999kHz, 30% Mod. 30dB, 400Hz	999kHz	Maximize the output	T204, T205

●AM RF Adjustment



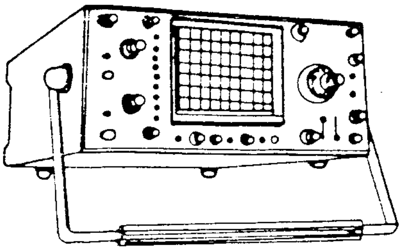
Symmetrical in up-and-down direction with good linearity
PN101 #1 GND
PN105 #1 or #2 GND
AM Signal Generator
AM Dummy
Set
VTVM
Oscilloscope
Sine Wave

Signal Generator	Frequency Display	Condition of Adjustment	Adjustment Parts
603kHz, 30% Mod. 30dB, 400Hz	603kHz	Maximize the output	T201, T202

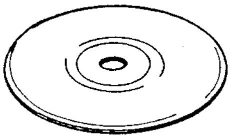
CDP ADJUSTMENTS

1. METER AND JIG FOR ADJUSTMENT

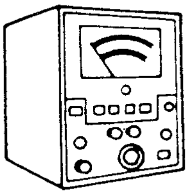
1-1. Oscilloscope



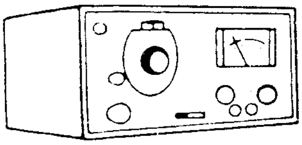
1-2. Test disc
(Sony type 4: YEDS-18)



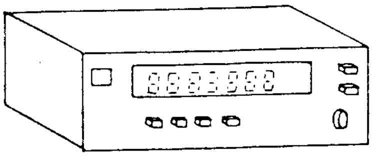
1-3. Jitter meter



1-4. Low frequency oscillator

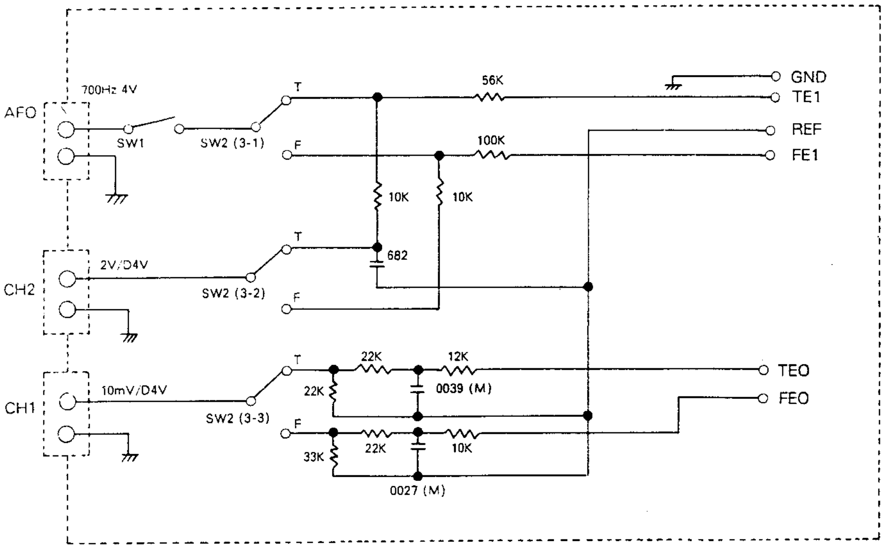


1-5. Digital frequency counter



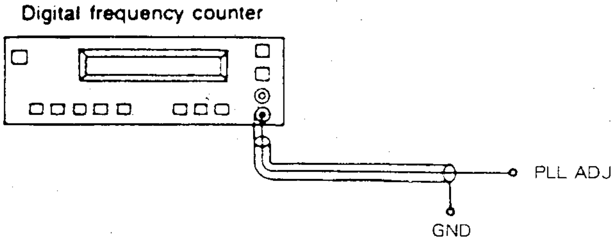
1-6. 10:1 Oscilloscope probe
1:1 Oscilloscope probe

1-7. Focus & tracking gain adjustment jig


700Hz 4V
AFO
SW1
SW2 (3-1)
T
F
56K
100K
GND
TE1
REF
FE1
10K
10K
682
2V/D4V
CH2
SW2 (3-2)
T
F
10mV/D4V
CH1
SW2 (3-3)
T
F
22K
12K
22K
0039 (M)
TEO
FEO
33K
22K
10K
0027 (M)

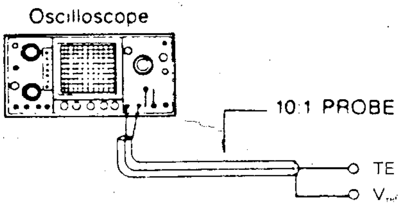
2. PLL (VCO) ADJUSTMENT

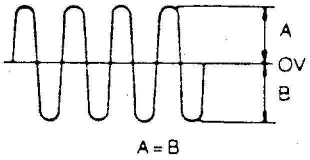
(1) TEST MODE (shortcircuit TEST point and RESET).
(2) Connect digital frequency counter to PLL ADJ and GND.
(3) Shortcircuit (ASY) and (GND).
(4) Push play and Load key (LCD will displays "— — — —").
(5) Adjust VR603 so that the frequency counter reading becomes 4.35MHz (±10kHz).


Digital frequency counter
PLL ADJ
GND

3. E-F BALANCE ADJUSTMENT

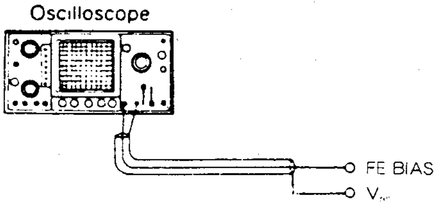
(1) TEST MODE (shortcircuit TEST point and RESET).
(2) Connect the oscilloscope to TE and Vref.
(3) Place test disc Loading and push Repeat key.
(4) Shortcircuit TEBAL and Vref.
(5) Adjust VR600 so that the amplitude above and below the zero DC line becomes equal (amplitude A=B).
(6) Open circuit TE BAL and Vref.


Oscilloscope
10:1 PROBE
TE
Vref



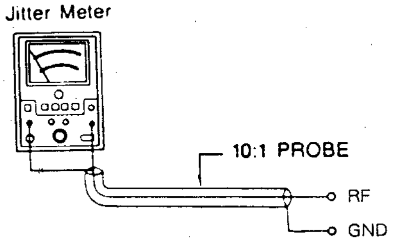
4. FOCUS OFFSET ADJUSTMENT (without jitter meter)

(1) Place test disc Loading.
(2) Put unit into play mode.
(3) Connect oscilloscope to FE BIAS and Vref.
(4) Adjust VR604 so that DC level become-200mV.


Oscilloscope
FE BIAS
Vref

5. FOCUS OFFSET ADJUSTMENT (with jitter meter)

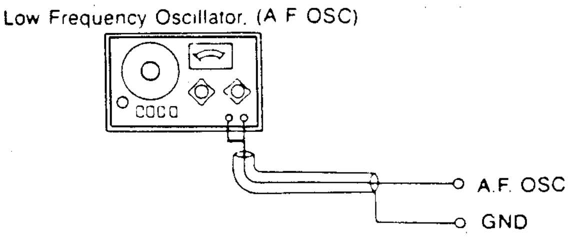
(1) Connect the jitter meter to RF and GND, set the input selection switch of jitter meter to position of "×1".
(2) Place test disc Loading.
(3) Put unit into play mode.
(4) Adjust VR604 so that the jitter meter reading is minimum.



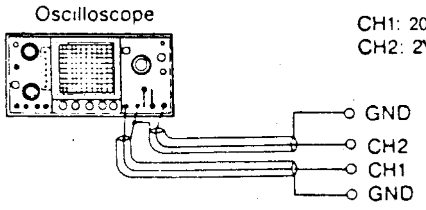
NOTE: Jitter meter must have input "×1" made selection switch.

6. FOCUS GAIN ADJUSTMENT (with jig)

(1) Connect from gain adjustment jig to wire on the main P. C. board pin to pin.
(2) Connect audio frequency oscillator to A.F. OSC terminal and GND on the gain adjustment jig. Set the audio frequency oscillator output to 600Hz, 4 V_{RMS}.

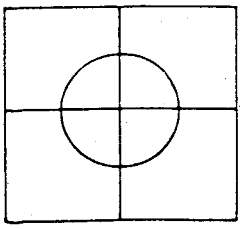


(3) Connect oscilloscope to CH1, CH2 and GND on the main P.C. board.

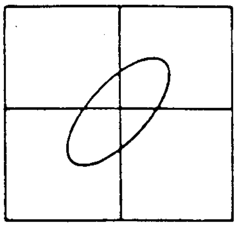


CH1: 20mV/div, AC MODE
CH2: 2V/div, AC MODE

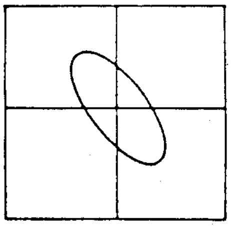
(4) Insert test disc and put unit into play mode on track.
(5) Set switch SW2 on the gain adjustment jig to the position of "F".
(6) Set switch SW1 on.
(7) Adjust VR601 so that the waveform on the oscilloscope becomes like below.



Good adjustment
(Optimum focus gain)



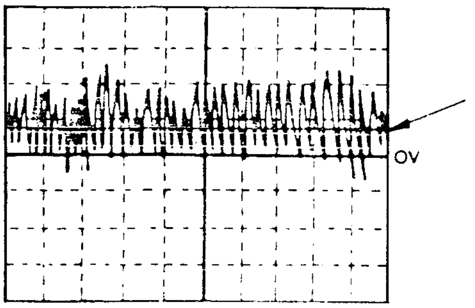
Bad adjustment
(In the case of low focus gain)



Bad adjustment
(In the case of high focus gain)

7. FOCUS GAIN ADJUSTMENT (without jig)

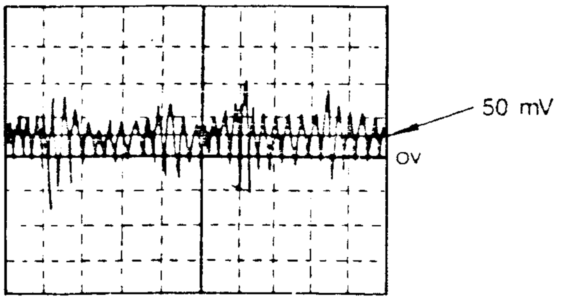
(1) Connect the oscilloscope to FEI and GND.
(2) Insert test disc and put unit into play mode on track.
(3) Adjust VR601 so that the waveform on the oscilloscope becomes like below.



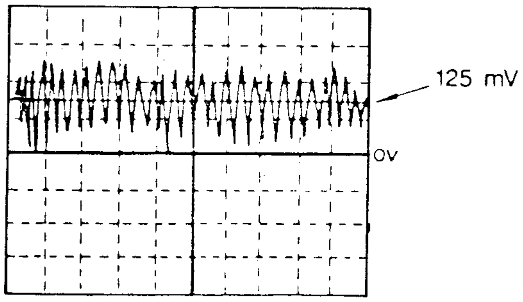
100mV/div.: Volt/div.
2mS/div.: Time/div.

NOTE: According to VR601 setting position, DC level of waveform varies.

Good adjustment
(Optimum focus gain)



Bad adjustment
(In the case of high focus gain)



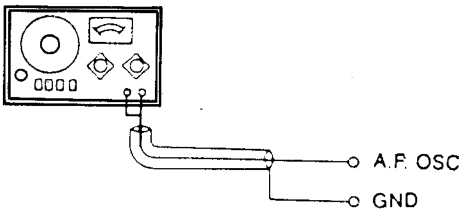
Bad adjustment
(In the case of low focus gain)

(4) This method will be convenient in the field. In spite of simple method, this method will not make serious problems.

8. TRACKING GAIN ADJUSTMENT (with jig)

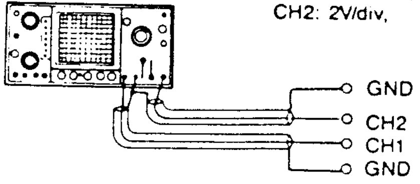
(1) Connect from gain adjustment jig to wire on the main P.C. board pin to pin.
(2) Connect audio frequency oscillator to A.F. OSC terminal and GND on the gain adjustment jig. Set the audio frequency oscillator output to 600Hz, 4 V_{RMS}

Low Frequency Oscillator (A F OSC)



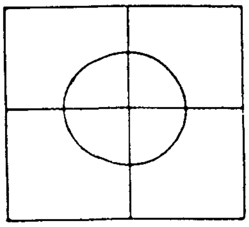
(3) Connect oscilloscope to CH1, CH2 and GND on the main P.C. board.

Oscilloscope

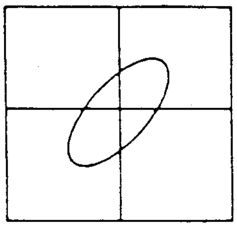


CH1: 20mV/div, AC MODE
CH2: 2V/div, AC MODE

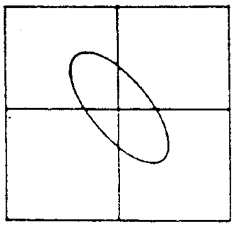
(4) Insert test disc and put unit into play mode on track.
(5) Set switch SW2 on the gain adjustment jig to the position of "T".
(6) Set switch SW1 on.
(7) Adjust VR602 so that the waveform on the oscilloscope becomes like below.



Good adjustment
(Optimum tracking gain)



Bad adjustment
(In the case of low tracking gain)



Bad adjustment
(In the case of high tracking gain)

ERROR INDICATION FOR TCH-55

INDICATION	CAUSE	SOLUTION
E-02	Loading malfunction	• Mechanism (Sensor 1. Sensor 2) • IC400 pin ⑤ ⑥ ⑩ ⑪ ⑫ • IC603 • connector CN601 • Mechanism Loading Motor
E-03	disc checking impossible	• Mechanism Loading Motor • IC400 pin ⑫ • connector CN601
E-04	FOCUS malfunction	• Mechanism connector CN600 • TR Q600 • IC600 ⑤⑥ ㉙㉖ pin VR600 • IC400 ⑦ (77) pin • Mechanism pickup laser diode
E-05	PLL locking malfunction	• IC600 ㉗ ㉖ ⑳ pin VR600 • IC700 ⑦ pin • PLL ADJ 4.35 MHz • IC601 ⑪ ⑫ pin • IC602
E-06	SLID impossible	• IC601 ⑬ ⑭ pin • IC602 ⑲ ⑳ pin • Mechanism Slid Motor
E-07	TOC reading malfunction	• IC700 ㉓ ㉔ pin • VR601, VR602
E-08	Eject impossible	• Mechanism Loading Motor
E-09	High Temperature	• Will disappear when the temperature returns to operation range. • TH601 • IC400 (79) pin

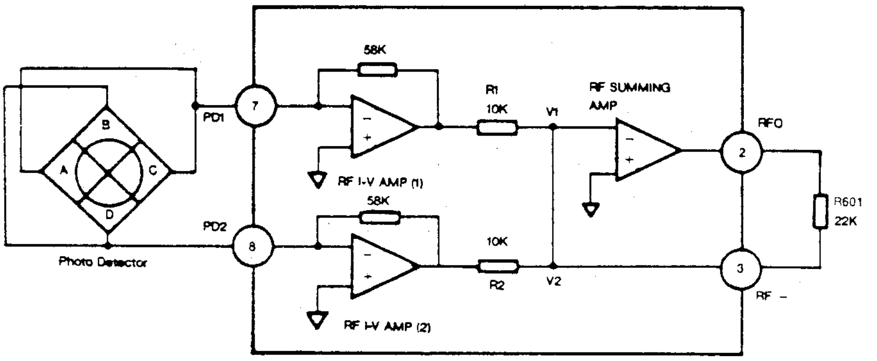
DESCRIPTION OF CIRCUIT

1. DESCRIPTION

The KA9201 is a RF amplifier for compact disc player. It is designed for 3-spot type optical pick-up assembly. The photo detector is composited of 6 light sensor (A through F). The photo detector A, B, C and D detectors for detecting audio modulation on the disc and also utilizing to develop focus error signal, the E and F photo detectors to detecting of tracking error signal.

2. OPERATING THEORY

1) RF AMP

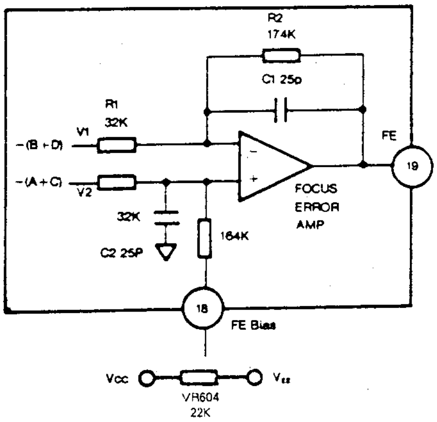


58K
R1
10K
V1
RF SUMMING AMP
RFO
PD1
7
B
A
C
D
2
RF I-V AMP (1)
58K
R601
22K
PD2
8
10K
Photo Detector
3
R2
V2
RF −
RF I-V AMP (2)

RF I-V AMP(1) and RF I-V AMP(2) are converted into voltage from current signal of PD1 (A+C) and PD2 (B+D) through the 58Kohm internal resistor. Furthermore, it is added in RF summing amplifier, this signal (A+B+C+D) is output at RFO (pin 2). The RF output voltage (low frequency) is as follow.

$V_{RF} = -R3*(iPD1+iPD2)$
$\quad = -R3*(V1/R1+V2/R2)$
$\quad = -22K*(V1/10K+V2/10K)$
$\quad = -2.2*(V1+V2)$

2) Focus Erros AMP



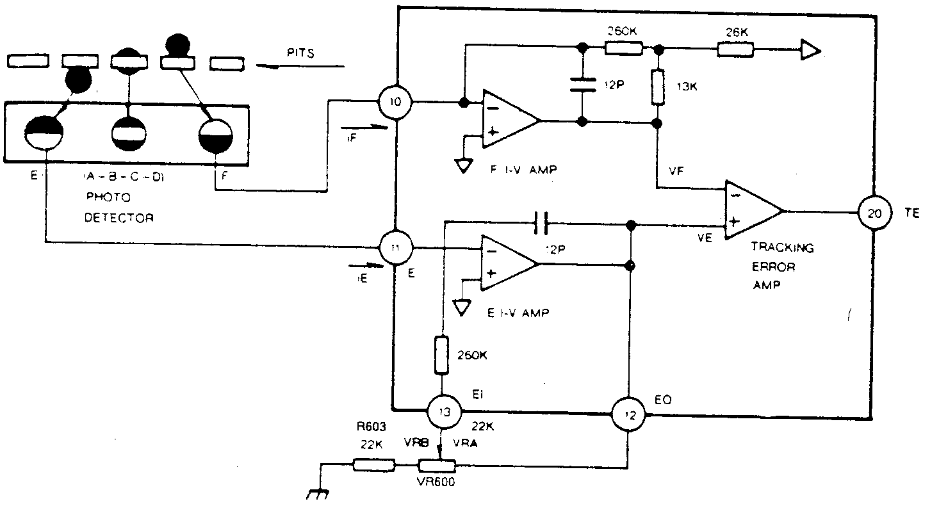
R2
174K
C1 25p
R1
32K
V1
−(B+D)
FE
−(A+C)
V2
19
FOCUS
ERROR
AMP
32K
164K
C2 25P
18
FE Bias
Vcc
VR604
22K

The Focus Error AMP is the difference between RF I-V AMP(1) output (A+C) and RF I-V AMP (2) output (B+D). This two [−(A+C), −(B+D)] signals are each applied to the (−) and (+) input of Focus Error AMP. As the result of differential voltage, Focus Error signal is appeared at FE pin (pin 19). This FE output voltage (low frequency) become [(A+C)−(B+D)], as follow.

$V_{FE} = R2/R1*(V2-V1)$
$\quad = 5.4\ (V2-V1)$

The focus error voltage is directed to the focus servo circuit, to maintain optimum focusing at all times.

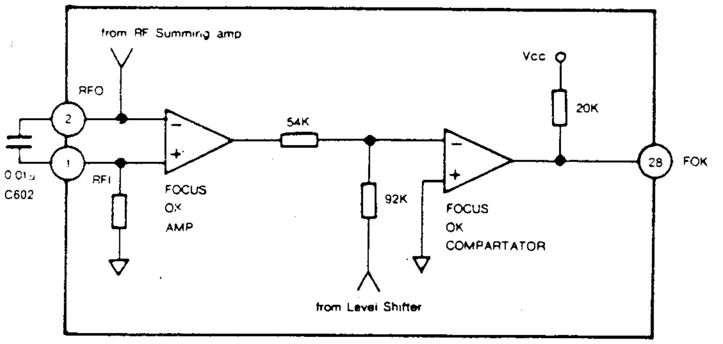
3) Tracking Error AMP


PITS
(A-B-C-D)
PHOTO
DETECTOR
E
F
iF
iE
10
11
E
260K
26K
12P
13K
F I-V AMP
VF
VE
12P
E I-V AMP
TRACKING
ERROR
AMP
20
TE
260K
EI
EO
13
12
R603
22K
22K
VRB
VRA
VR600

The output of photo detector F is directed to the (−) input of F I-V amp, and output of photo detector E is directed to the (−) input of F I-V amp. These input signals are current. E I-V AMP and F I-V AMP are converted into voltage from the current signal. When correct tracking, two input (VF, VE) signals are equal. The occurence of tracking error is due to difference between F I-V amp output and E I-V amp output, and the TE output voltage is as follow.

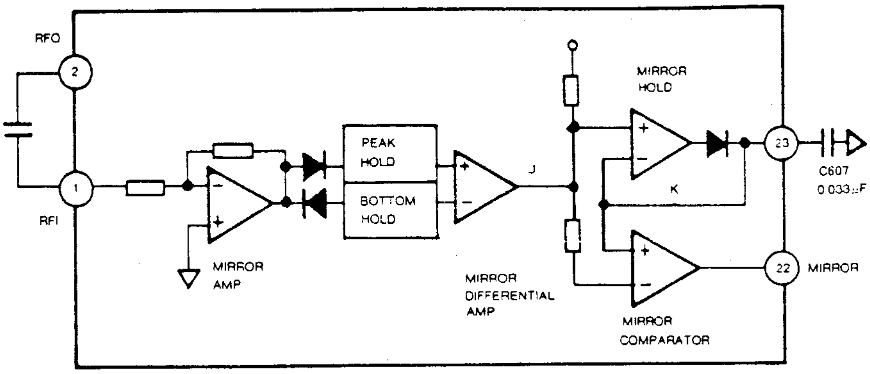
VF=iF*[260K* 13K/26K)+273K]
   =iF* 403K
VE=iE*[260K*(VRA/VRB+22K)+(VRA+260K)]
accordingly, V_{TE}=(iE-iF)* 1290K

4) Focus OK Circuit


from RF Summing amp
RFO
2
1
RFI
0.01μ
C602
FOCUS
OK
AMP
54K
92K
from Level Shifter
Vcc
20K
FOCUS
OK
COMPARTATOR
28
FOK

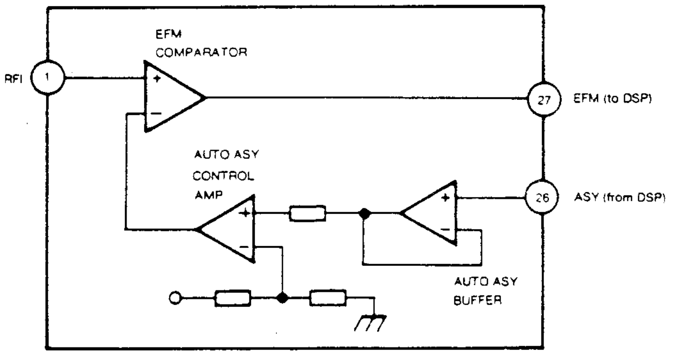
The focus OK circuit generates a timing window to look on the focus servo at focus search status. When RFO (Pin 2) voltage is more than −0.37 volt, the focus amp output is inverted. The RFI pin (Pin 1) will get the HPF output from a RF signal of RFO (Pin 2), and the Pin 2 is LPF output opposite for focus OK amplifier output. Time constants of HPF in EFM comparator and in mirror circuit, and that of LPF in focus OK amp are determined by the capacitor (0.01μ) between RFI and RFO.
In case of 0.01μF, cut-off frequency will be 1kHz. This capacitor reduce error due to damaged RF envelop result from the scratched disc, and so on.

5) Mirror Circuit


RFO
2
1
RFI
MIRROR
AMP
PEAK
HOLD
BOTTOM
HOLD
J
MIRROR
DIFFERENTIAL
AMP
MIRROR
HOLD
K
23
C607
0.033μF
22
MIRROR
MIRROR
COMPARATOR

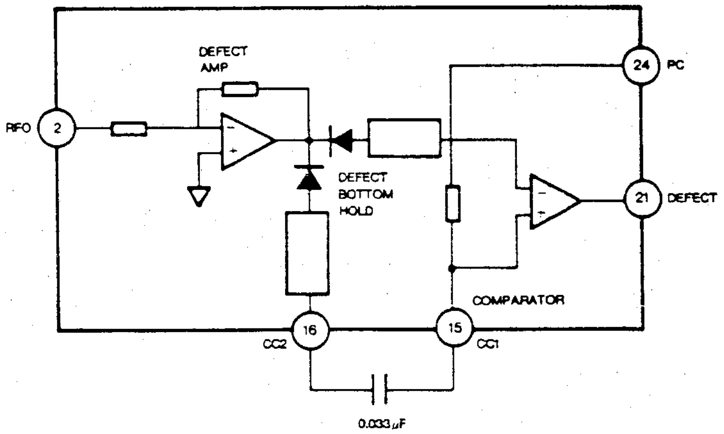
After RF input signal is amplified by Mirror AMp, it is held in Bottom & Peak hold circuit. Such a hold is determined by the time constant. Envelop signal J (demodulated to DC) is two-thirds of the peak value of this signal the time constant of J signal is held when it is larger than that of K signal. Therefore, mirror output is; Low at track on disc, High at between tracks on disc, High when defect is detected. The time constant of mirror hold required to be larger enough than that of traverse signal.

6) EFM (Eight to Fourteen) Comparator


EFM
COMPARATOR
RFI
1
27
EFM (to DSP)
AUTO ASY
CONTROL
AMP
26
ASY (from DSP)
AUTO ASY
BUFFER

The EFM comparator convert a RF signal to a binary signal. A processing of disc production be occured disproportion because by modification of disc, that is not reduced by only AC coupling. The reference voltage of EFM comparator is controlled utilizing the fact that the generation-probability 1, 0 is 50%. In the binary EFM signal, as this comparator is a current switching type, each of the high and low levels are differention feedback through power supply and C-MOS buffer. R1, R2, C1 and C2 if for get $(Vcc+D_{GND})/2$ Volt. when the cut-off frequency is larger than 500Hz, EFM low frequency may be deterioration, and black error rate may be bad.

7) Defect Circuit

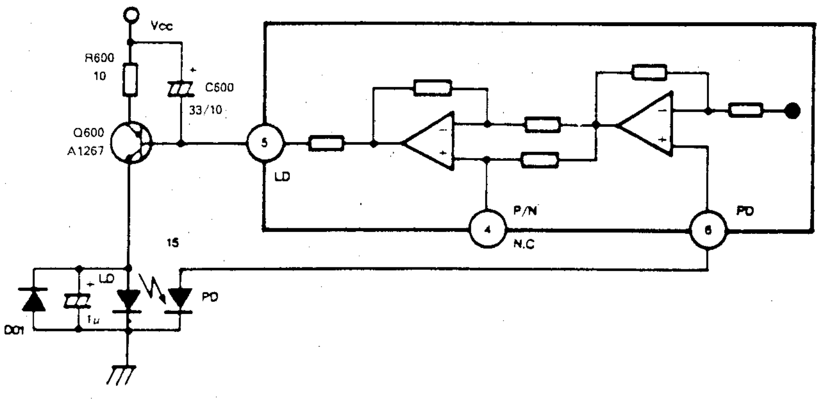

DEFECT
AMP
RFO
2
DEFECT
BOTTOM
HOLD
24
PC
21
DEFECT
COMPARATOR
16
CC2
15
CC1
0.033μF

The bottom hold has had two time constant of long an short, after than the RFI signal inverted. The short time constant of bottom hold is generated by shoter than 0.1msec of disc mirror defect, and long time constant is generated by previous mirror level. Mirror defect detection signals are generated by differentiate on capacitor coupling and then transfor level.

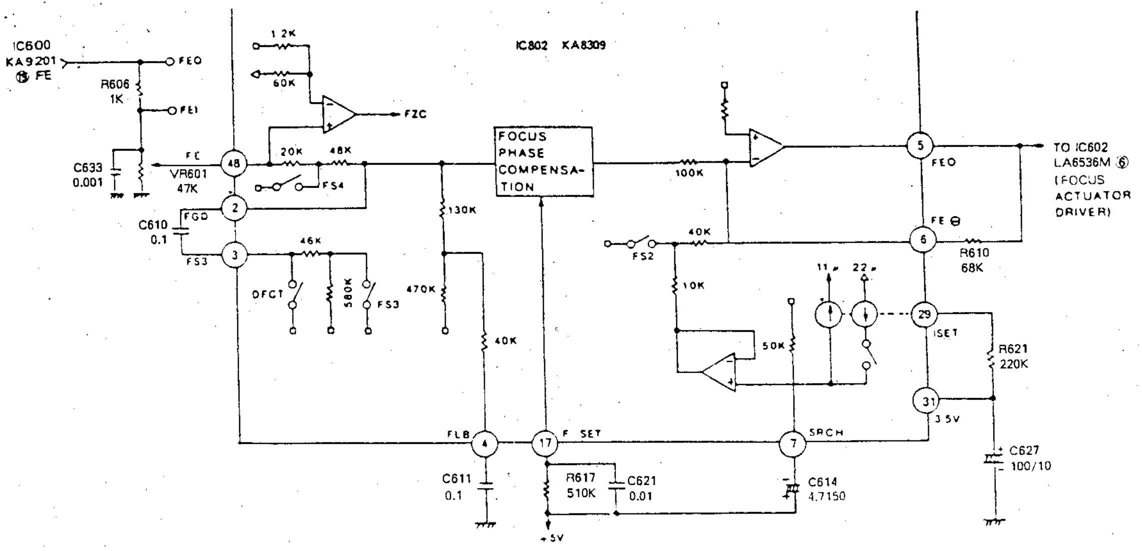
8) APC (Automatic Power Control) Circuit

As the laser diode has had large negative temperature characteristic when do something for regularly supply current on laser diode. Therefore, the output on processing monitor photo diode, must be a controlled current for get regularly output power. Thus APC circuit composed, this circuit use for P-sub and N-sub of laser diode, sigle power supply operation as well as split power supply operation.

(1) +5V Signal Power Supply P-sub Laser


Vcc
R600
10
C600
33/10
Q600
A1267
5
LD
4
P/N
N.C
6
PD
15
LD
PD
1μ
D01

9. FOCUS SERVO SYSTEM


IC600
KA9201
⑬ FE
FEO
R606
1K
FEI
C633
0.001
FE
VR601
47K
C610
0.1
FGD
FS3
1.2K
60K
FZC
20K
48K
FS4
46K
OFCT
580K
FS3
130K
470K
40K
IC802 KA8309
FOCUS PHASE COMPENSATION
100K
40K
FS2
10K
50K
11μ
22μ
FEO
FE ⊖
R610
68K
TO IC602
LA6536M ⑥
(FOCUS ACTUATOR DRIVER)
ISET
R621
220K
3.5V
C627
100/10
FLB
F SET
SRCH
C611
0.1
R617
510K
C621
0.01
C614
4.7150
+5V
48
2
3
4
17
7
5
6
29
31

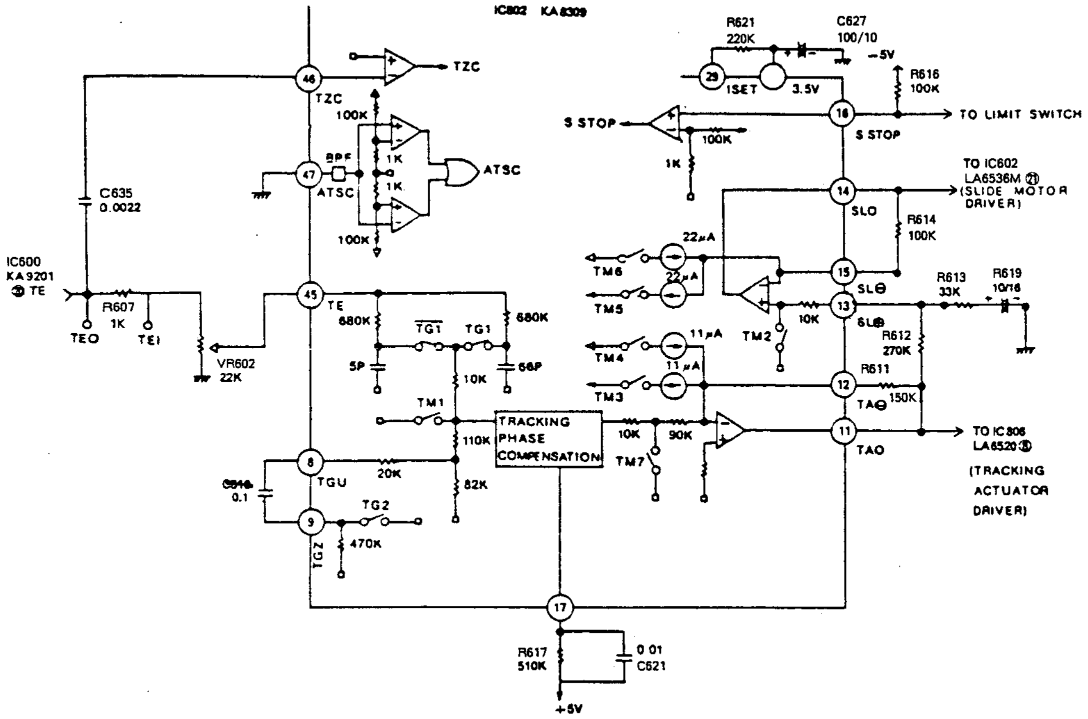
The above is a block diagram of the focus servo system. When FS3 is switched on, the high frequency gain can be reduced by forming a low frequency time constant through a capacitor connected across pins 2 and 3 and the internal resistor.

The capacitor across the pin 10 and GND has a time constant to raise the low frequency usually playback condition. The peak frequency of the focus phase compensation is inversely proportional to the resistor connected to pin 17 (about 1.2KHz when the resistor is 510KΩ).

The focus search peak becomes about ±1.1 V_{P-P} with the above constant. The peak is inversely proportional to the resistor connected across the pins 29 and 31. However, when this resistor is varied, the peaks of track jump and sled kick also vary.

The FZC comparator invert input is set to 2% of the difference between the reference voltage V_{CC} and VC (pin 1): $2\% \times (V_{CC} - VC)$.

10. TRACKING SERVO SYSTEM


IC602 KA8309
R621
220K
C627
100/10
-5V
29
ISET
3.5V
R616
100K
16
TO LIMIT SWITCH
S STOP
S STOP
100K
1K
TO IC602
LA6536M ㉑
(SLIDE MOTOR
DRIVER)
14
SLO
R614
100K
46
TZC
TZC
100K
BPF
1K
1K
47
ATSC
ATSC
100K
C635
0.0022
IC600
KA9201
⑳ TE
R607
1K
TEO
TEI
VR602
22K
45
TE
680K
680K
TG1
TG1
5P
66P
10K
TM1
110K
TRACKING
PHASE
COMPENSATION
20K
82K
8
TGU
C616
0.1
9
TG2
470K
TGZ
22μA
22μA
TM6
TM5
15
SL⊖
13
SL⊕
10K
TM2
R613
33K
R619
10/16
R612
270K
11μA
11μA
TM4
TM3
12
R611
150K
TA⊖
10K
90K
TM7
11
TAO
TO IC806
LA6520⑤
(TRACKING
ACTUATOR
DRIVER)
17
R617
510K
0.01
C621
+5V

The above is a block diagram of the tracking sled servo system.

The capacitor across pins 8 and 9 has a time constant to lower the high frequency when TG2 is switched off. The tracking phase compensation peak frequency is inversely proportional to the resistor connected to pin 17 (about 1.2KHz when the resistor is 510KΩ).

For a tracking jump in the FWD or REV direction, TM3 or TM4 are set to ON. At this time, the peak voltage fed to the tracking coil is determined by the TM3 and TM4 current values and the feedback resistor from pin 12. That is:

Track jump peak voltage = TM3 (TM4) current value × feedback resistor value

The FWD or REV sled kick is done by setting TM5 or TM6 to ON. At this time, the peak voltage added to the sled motor is determined by the TM5 or TM6 current value and the feedback resistor from pin 15.

Sled jump peak voltage = TM5 (TM6) current value × feedback resistor value

Each SW current value is determined by the resistor connected to pins 29 and 31.

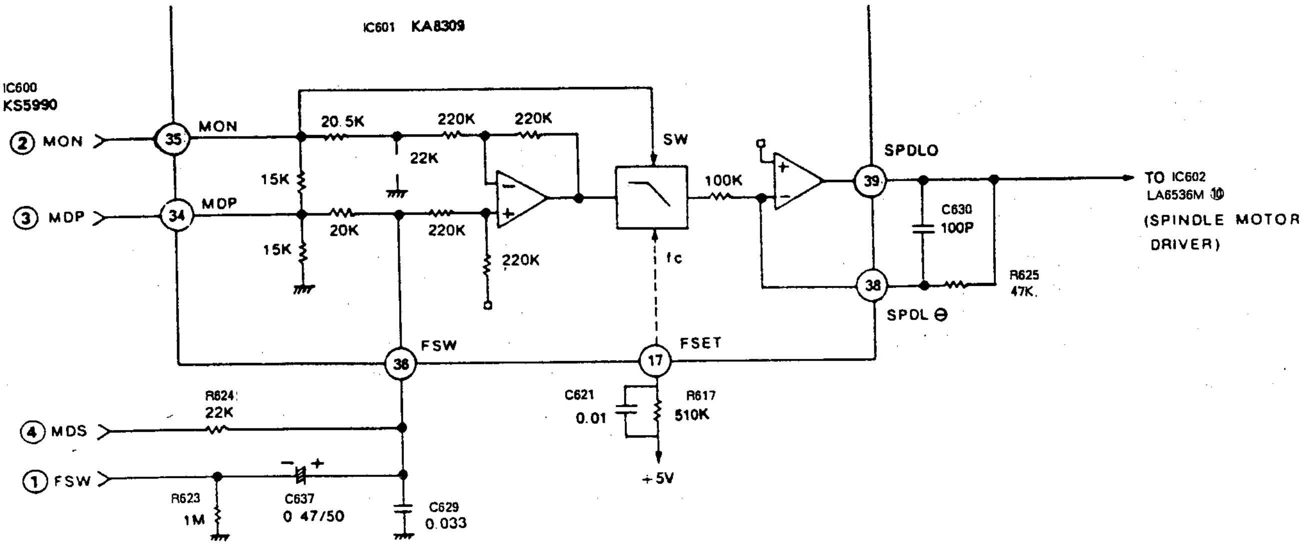
When the resistor is at about 120KΩ.

TM3 or TM4 is ±11μA and TM5 or TM6 is ±22μA.

This current value is almost inversely proportional to the resistor, variable within a range of about 5 to 40μA for TM3.

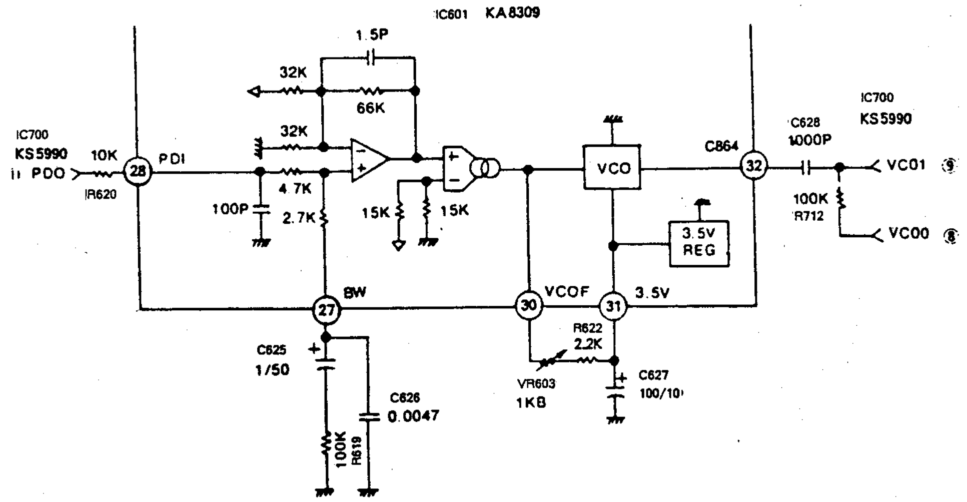
S STOP is the ON/OFF detection signal for the limit SW of the sled motor's innermost circumference.

11. SPINDLE SERVO AND LPF


IC601 KA8309
IC600
KS5990
② MON
③ MDP
④ MDS
① FSW
35
MON
34
MDP
20.5K
220K
220K
22K
15K
15K
20K
220K
220K
SW
fc
100K
39
SPDLO
C630
100P
38
SPDL ⊖
R625
47K
TO IC602
LA6536M ⑩
(SPINDLE MOTOR DRIVER)
36
FSW
17
FSET
C621
0.01
R617
510K
+5V
R624
22K
R623
1M
C637
0.47/50
C629
0.033

The 200HZ LPF is formed with 0.033μF and 20KΩ connected to pin 36 and the secondary LPF is formed with the built-in LPF (fc up to 200Hz with 510KΩ for pin 17), and the carrier component of the CLV servo error signals MDS and MDP is eliminated.
In the CLV-S mode, FSW becomes L and the pin 36 LPF fc lowers, strengthening the filter further. With the pin 17 resistor connected to V_{cc}, fc does not vary with power supply voltage fluctuations.

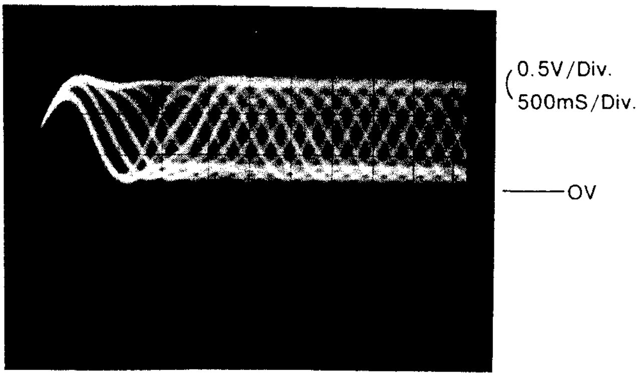
12. VCO LOOP FILTER & 8.64MHz VCO


IC601 KA8309
1.5P
32K
66K
32K
IC700
KS5990
⑪ PDO
10K
R620
28
PDI
4.7K
100P
2.7K
15K
15K
VCO
C864
32
C628
1000P
IC700
KS5990
VCO1
100K
R712
VCO0
3.5V
REG
27
SW
30
VCOF
31
3.5V
R622
2.2K
VR603
1KB
C627
100/10
C625
1/50
C626
0.0047
100K
R619

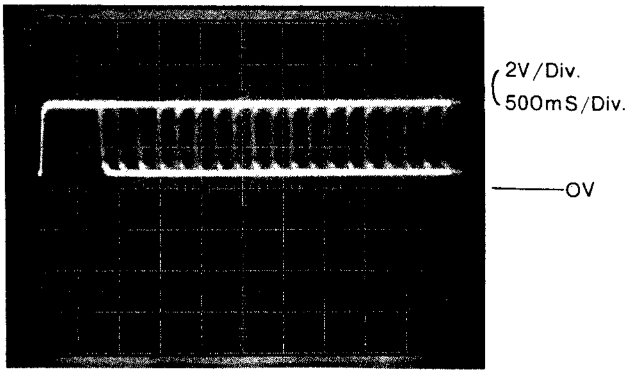
The phase compensation output PDD input from pin 38 has its PWM carrier component removed in the loop filter. Then, the V-I conversion is made and the free-running frequency setting current from pin 30 is added to control the VCO frequency. The VCO self-running frequency is almost inversely proportional to the resistor across pins 30 and 31. This resistor is set so that the PLL capture range center matches the 4.3218MHz at pin 70 of the KS5990.

MAJOR WAVEFORM

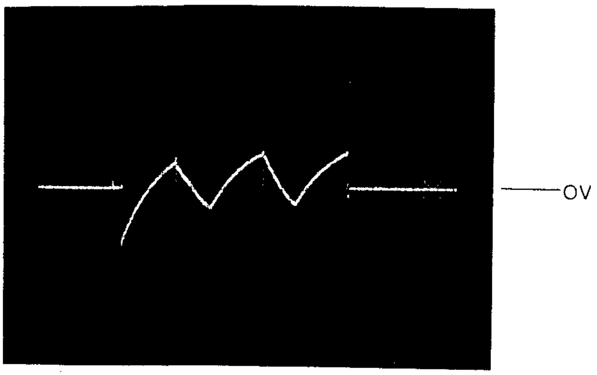
1. HF signal (RF signal) waveform (test point RF) during normal play



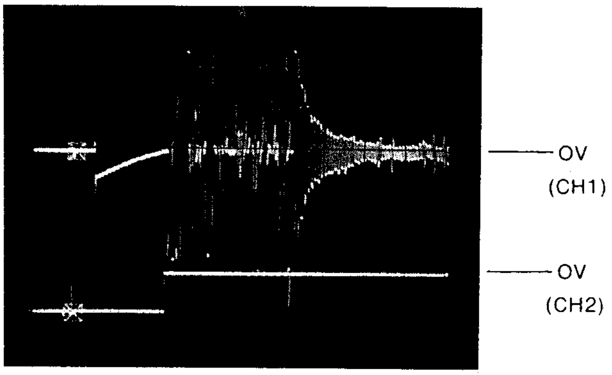
2. EFM signal (pin NO. ㉗ IC600) waveform during normal play.



3. Focus coil drive waveform (FO of Pin NO. ③, ④ of IC602)
   - When focus search failed or there is no disc on the tray



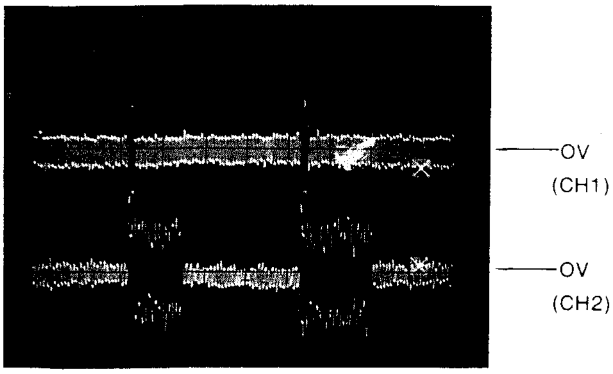
- Focus coil drive waveform (FO of Pin No ③, ④ of IC602) and FOK (pin NO. ㉘ of IC600) when focus search is accomplished



CH1: FOCUS COIL DRIVE SIGNAL
2V/Div.
CH2: FOK

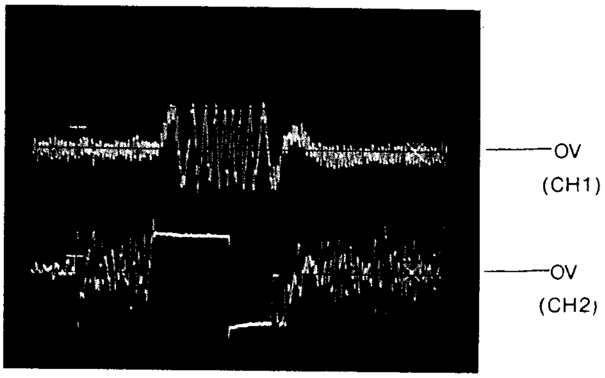
4. Tracking coil drive waveform ㉘, ㉗ of IC602) and TEO during track traverse

(1) When time division is 20mS/div.



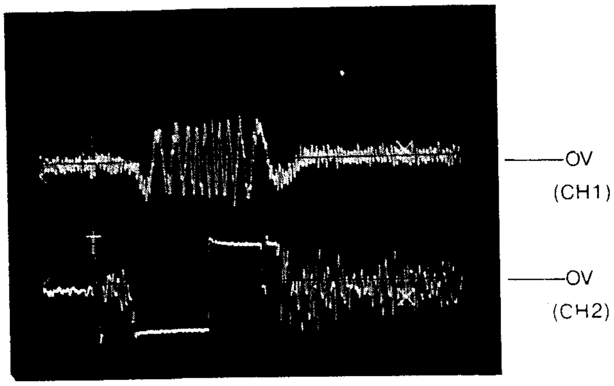
CH1: TEO
1V/div.
CH2: TRACKING COIL DRIVE SIGNAL
2V/div.

(2) When time division is 0.5mS/div.
(During forward track traverse)



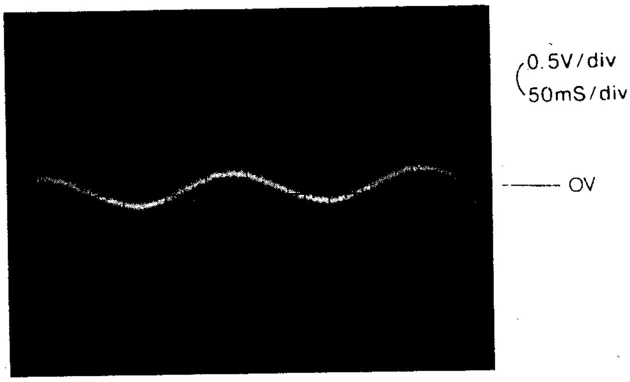
CH1: TEO
1V/div.
CH2: TRACKING COIL DRIVE SIGNAL
2V/div.

(3) When time division is 0.5mS/div.
(During backward track traverse)



CH1: TEO
1V/div.
CH2: TRACKING COIL DRIVE SIGNAL
2V/div.

(5) Feed motor dirve waveform (No. ⑲, ⑳ of IC602 During normal play



PIN FUNCTION OF IC

● IC400 μPD75516GF

NO.	Symbol	I/O	DESCRIPTION
1	SDL	I	Input voltage signal meter
2	AV_{ref}		A/D convertor reference voltage
3	V_{DD}		+5V
4	V_{PP}		+5V
5 6	PZLM+ PZLM−	O	LOADING Motor control output (DISC is loaded when the signal changes from "H" to "L" and ejected when the signal is changes from "L" to "H")
7	PZPOWER	O	CD section power on or off
8	PZSQCK	I	Clock output for the subcode Q signal input
9	PZSUBQ	I	Subcode Q signal input
10	PZ1SW	I	Loading start switch input; 8cm disc eject complete switch input (Turn on at "H")
11	PZ2SW	I	Input signal for 8cm or 12cm disc detection. Signal input is upon completion of the 12cm disc eject or loading start senser from that status. (The signal turns on at "H")
12	PZFSW	I	DISC chucking complete switch input (Turns on at "L")
13	PZAPC	O	Laser control (on or off) output (on when "L")
14	PZDMUTE	O	DSP mute control output
15	PZRESET	O	IC601 and IC700 reset control (on or off) output (on when "H")
16	N. C		
17	GND		
18	PLCDDATA	O	Output the serial to the LCD driver
19	PLCD CLK	O	Output clok signal for communication with the LCD driver
20	PLCD CE	O	Output the chip enable signal to the LCD driver
21 ~ 28	KI0 ~KI7	I	Key Scan input port

NO.	Symbol	I/O	DESCRIPTION
29 ~ 32	KS1 ~KS4	O	Key Scan output port
33	Vss		
34	KSO	O	Key Scan output port
35 36	PSIG1 PSIG2	O	output the signal for switching between the CD and tuner audio signal
37 ~ 39	N.C		
40	PDKOUT	O	output signal to detect DK ON
41	PSTEREO	I	Inputs the stereo indicator signal
42	PLOUD	O	output LOUD on/off signal
43	PLINH	O	output the signal to turn all the LCD$_s$ off
44	PMUTE	O	Audio mute control output
45	PBEEP	O	Beep tone output
46	PSK	I	Input the SK signal detection
47	PACC	I	Input the chip enable signal
48	PDK	I	Inputs the DK signal detection
49	PZSCOR	I	Subcode sync SO+SI signal input
50	PLLDATAIN	I	Input serial data to the PLL IC
51	PLLDATA OUT	O	output serial data to the PLL IC
52	PLLCLK	O	output clock for data communication PLL IC
53	PBACKUP	I	Input the chip enable signal
54	VSS		
55	GND		
56	N.C		
57	GND		
58	X$_1$		Crystal connecting terminal (4.19 MHz)
59	X$_2$		
60	RESET	I	Reset signal input
61	PPLLCE	O	output the chip enable
62 ~ 64	N.C		
65 ~ 67	GND		
68	PZLSW	I	Switch input terminal indicating that pick-base come to the up or down location
69	PZEMP	O	Emphasis control (on or off) output
70	PZCLK	O	Clock output for the serial data transfer to IC601 and IC700
71	PZXLT	O	Latch output to IC601 and IC700
72	PZDATA	O	Serial data output to IC601 and IC700
73	GND		
74	N.C		
75	PGFS	I	Input to the GFS (frame sync lock status display)
76	PSENS	I	SENSE Signal input
77	PFOK	I	FOK signal input (Focus OK signal input)

NO.	Symbol	I/O	DESCRIPTION
78	GND		
79	PTEMP	I	Input signal to detect high temperature
80	PTEST	I	TEST mode setting terminals

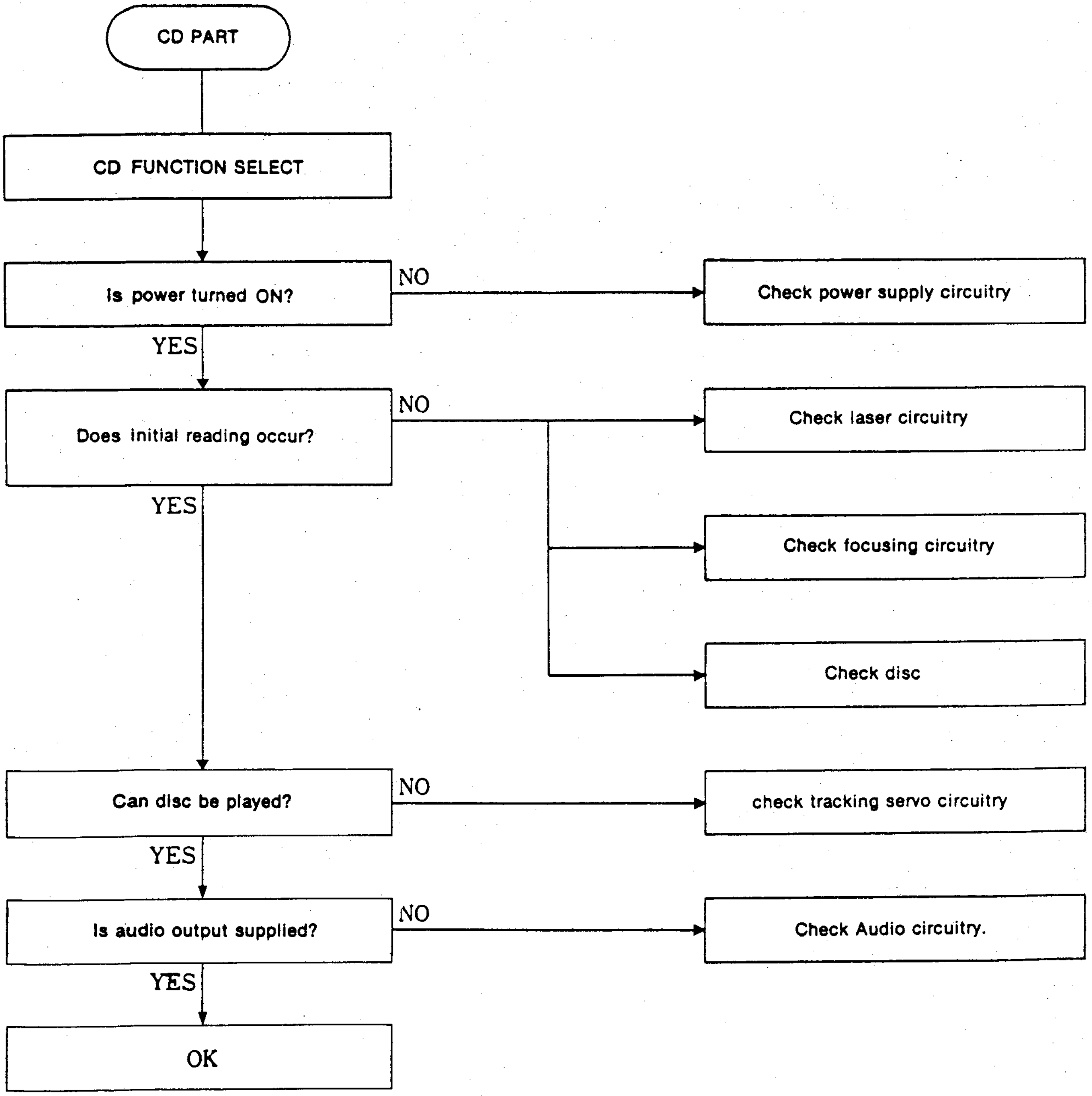
●IC503 KS5990

No.	Symbol	I/O	Description
1	SMEF	O	Pin 1 output is switched constant when output filter of the spindle motor is energized.
2	SMON	O	ON/OFF control for spindle motor.
3	SMPD	O	Spindle motor drive. Provides rough control during CLV-S mode and phase control during CLV-P mode.
4	SMSD	O	Spindle motor drive. Controls speed during CLV-P mode.
5	EFMZ	I	EFM signal from RF amplifier.
6	EFMO	O	Controls slice level of the EFM signal.
7	LOCK	O	The output of pin 7 reflects the status of the GFS signal which is sampled at PBFR/16. When the GFS signals is "H", but, when the signal has remained "L" for at least 8 samples, the output of pin 7 is "L".
8	VCOO	O	VCO output. The frequency is f=8.6436MHz, when locked by the DBFR signal.
9	VCOI	I	VCO input.
10	TEST	I	(0V).
11	PHAS	O	The output of Pin 11 provides phase comparison of EFM signal and VCO/2.
12	V_{ss}	—	GND (0V).
13	MCK	I	Pin 13 provides serial transmission clock from the CPU. Data is latched on the leading edge of the clock.
14	MLT	I	Pin 14 provides latch input clock from the CPU. 8-bit shift register data (serial data received from the CPU) is latched in each of the registers.
15	MDAT	I	Serial data from the CPU.
16	XRST	I	System reset ("L").
17	TRCK	I	Tracking pulse input.
18	ISTAT	O	Output reflecting internal condition as designated by address.
19	MUTE	I	Muting input. MUTE is "L" when ATTM of internal register A is "L" (normal condition). MUTE is "H" when meting condition is set.
20	SQOK	O	Output the results CRC check of subcode Q.
21	SBCK	I	Clock input for subcode serial output
22	SDAT	O	Serial output of subcode.
23	SQDT	O	Output of subcode Q.
24	S0S1	O	Output of subcode sync S0+S1.
25	SQCK	I/O	Clock for reading subcode Q.
26	SQEN	I	Input for selecting SQCK (L; SQCK is output, H; SQCK is input)
27	SRAM	I	SRAM is "H" in Normal, SRAM is "L" when system is testing.
28	LKFS	O	Display output for frame sync lock status.
29	DB8	I/O	Data pin for external RAM. DATA8 (MSB) in test mode. Hi-Z in nomal
30	DB7	I/O	Data pin for external RAM. DATA7 in test mode. Hi-Z in nomal
31	DB6	I/O	Data pin for external RAM. DATA6 in test mode. Hi-Z in nomal
32	DB5	I/O	Data pin for external RAM. DATA5 in test mode. Hi-Z in nomal
33	V_{DD}	—	Power supply (+5V).

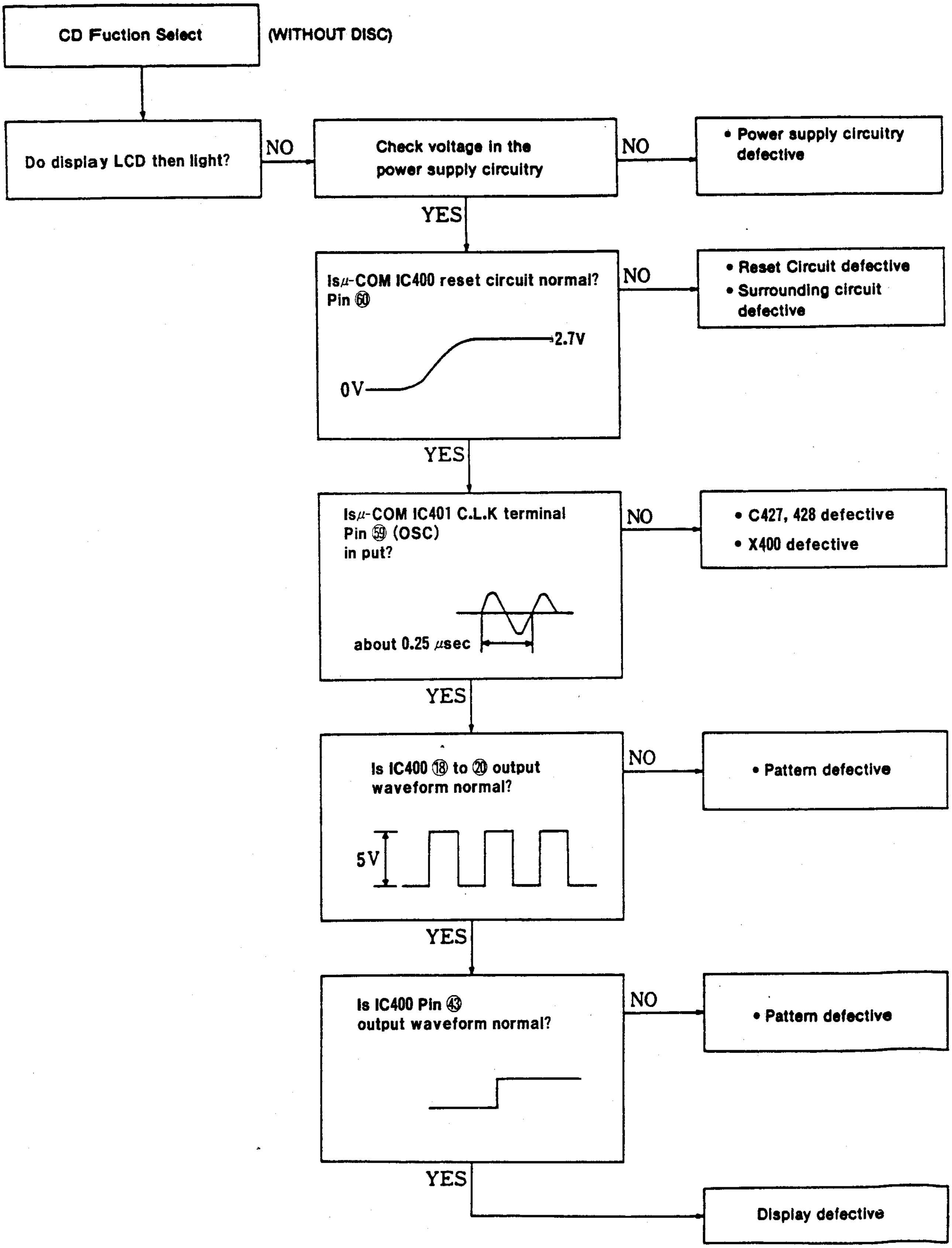
NO.	Symbol	I/O	DESCRIPTION
34	DB4	I/O	Data pin for external RAM. DATA4 in test mode. Hi-Z in nomal
35	DB3	I/O	Data pin for external RAM. DATA3 in test mode. Hi-Z in nomal
36	DB2	I/O	Data pin for external RAM. DATA2 in test mode. Hi-Z in nomal
37	DB1	I/O	Data pin for external RAM. DATA1 (LSB) in test mode. Hi-Z in nomal
38	AD01	O	(LSB)
39	AD02	O	In nomal mode (TEST="L", SRAM="H"), these pins are High impedance (Hi-Z) In test mode (TEST="H", SRAM="L"), these pins are Output address of external RAM.
40	AD03	O	
41	AD04	O	
42	AD05	O	
43	AD06	O	
44	AD07	O	
45	AD08	O	
46	AD09	O	
47	AD10	O	
48	AD11	O	(MSB)
49	WE	I/O	In nomal mode, this is WE output. In test mode, write enable input.
50	CE	I/O	In nomal mode, this is CE output. In test mode, chip enable input.
51	4MCK	O	Drvider output for crystal. f=4.2336MHz
52	V_{SS}	—	GND (0V).
53	XIN	IN	Input to crystal oscillator circuit. Depending on the mode the frequency is either=8.4672 or 16.9344MHz.
54	XOUT	O	Output from crystal oscillator circuit. Depending on the mode the frequency is either f=8.4672 or 16.9344MHz.
55	SEL1	I	Mode selection input 1.
56	SEL2	I	Mode selection input 2.
57	SEL3	I	Mode selection input 3.
58	SEL4	I	Mode selection input 4. Code switch input for audio data output. 2's complement output when "L", offset binary output when "H".
59	SEL5	I	Mode selection input 5. Code switch input for audio data output. Serial output when "L", parallel output when "H".
60	APTR	O	Output for aperture compensation. "H" when R-ch.
61	APTL	O	Output for aperture compensation. "H" when L-ch.
62	C1F1	O	Monitor output reporting status of error correction for C1 decoder. When SEL5="L", DA01 (LSB of parallel audio data) is output when SEL5="H".
63	C1F2	O	Monitor output reporting status of error correction for C1 decoder when SEL5= "L", DA02 is output when SEL5="H".
64	C2F1	O	Monitor output reporting status of error correction for C2 decoder when SEL5= "L", DA03 is output when SEL5="H".
65	C1F2	O	Monitor output reporting status of error correction for C2 decoder when SEL5= "L", DA04 is output when SEL5="H".
66	C2FL	O	When SEL5="L", output of status condition. C2FL is set "H" when the C2 sequence. Presently being corrected becomes impossible to correct. DA05 is output when SEL5="H".
67	C2PO	O	Display output of the C2 pointer when SEL5="L",. DA06 is output when SEL5="H".
68	XTFR	O	When SEL5="L", output of read frame dock which is 7.35KHz of the crystal system. DA07 is output when SEL5="H".

No.	Symbol	I/O	Description
69	PBFR	O	When SEL5="L", output of write frame clock which is 7.35KHz when locked by the crystal system. DA0 9 is output when SEL5="H".
70	PBCK	O	When SEL5="L", output of VCO/2 (f=4.3218MHz when locked by the EFM signal). DA09 is output when SEL5="H".
71	FSDW	O	When SEL5="L", output for unprotected frame sync patterns. DA10 is output when SEL5="H".
72	ULKFS	O	Output for display of status of frame sync protection when SEL5="L", DA11 is output when SEL5="H".
73	V_{DD}	—	Power supply (+5V).
74	JIT	O	When SEL5="L", output for display of either RAM overflow or underflow for +4 frame jitter absorption. DA12 is output when SEL5="H".
75	ZWDCK	O	When SEL5="L", output for strobe signal (352.8KHz when DF is ON, 176.4KHz when DF is OFF). DA13 is output when SEL5="H".
76	BLCK	O	When SEL5="L", inverser output of BLCK. DA14 is output when SEL5="H".
77	BLCK	O	When SEL5="L", bit clock output (4.2336MHz when DF is ON, 2.1168MHz when DF is OFF) DA15 is output when SEL5="H".
78	DATA	O	Serial data output of audio signal when SEL5="L". DA16 is output when SEL5="H".
79	WDCK	O	Strobe signal output. Output is 176.4KHz when DF is on. Output is 88.2KHz when DF is off.
80	CHCK	O	Strobe signal output. Output is 88.2KHz when DF is on. Output is 44.1KHz when DF is off.

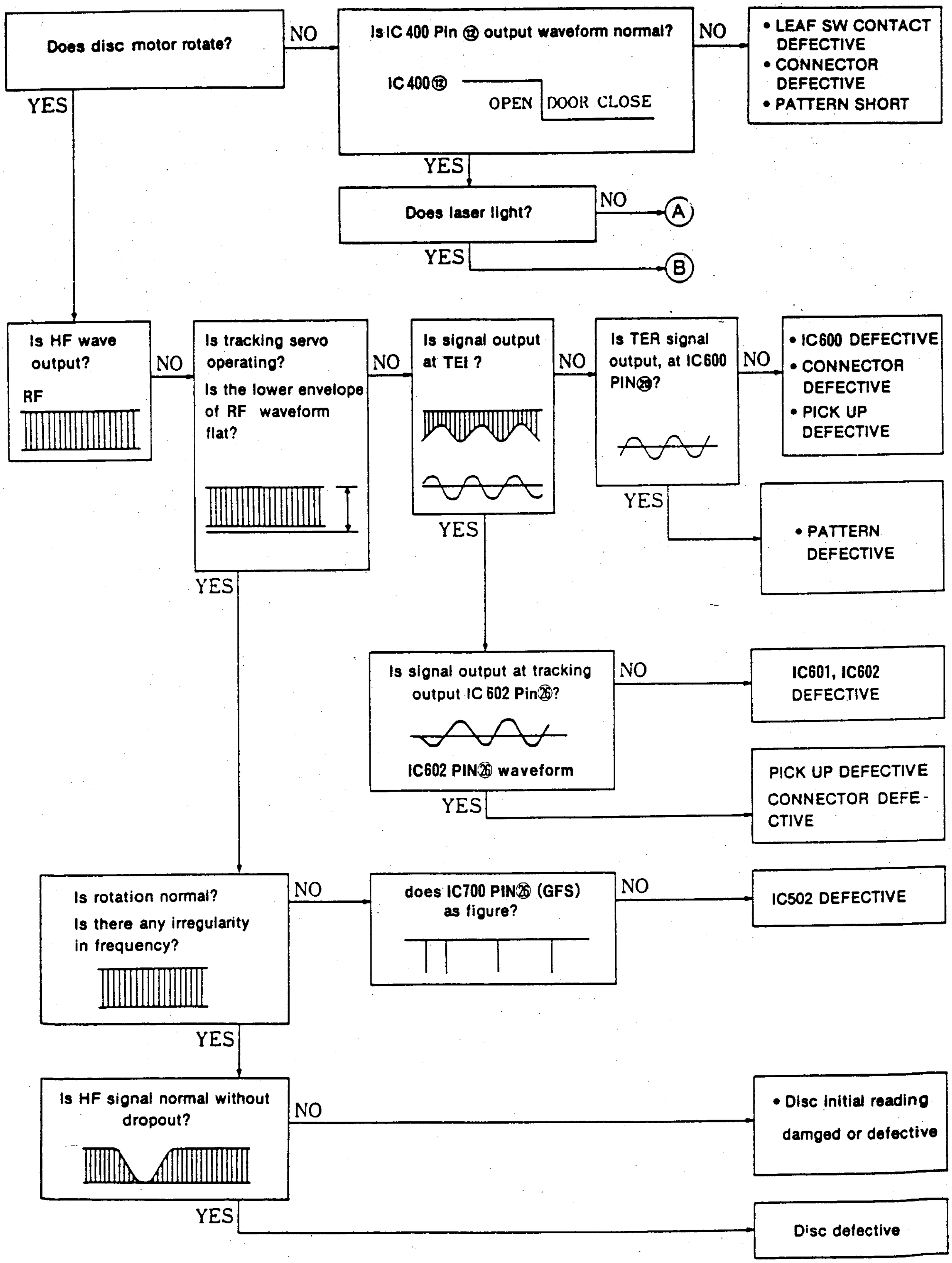
TROUBLESHOOTING GUIDE


CD PART
CD FUNCTION SELECT
Is power turned ON?
NO
Check power supply circuitry
YES
Does initial reading occur?
NO
Check laser circuitry
Check focusing circuitry
Check disc
YES
Can disc be played?
NO
check tracking servo circuitry
YES
Is audio output supplied?
NO
Check Audio circuitry.
YES
OK

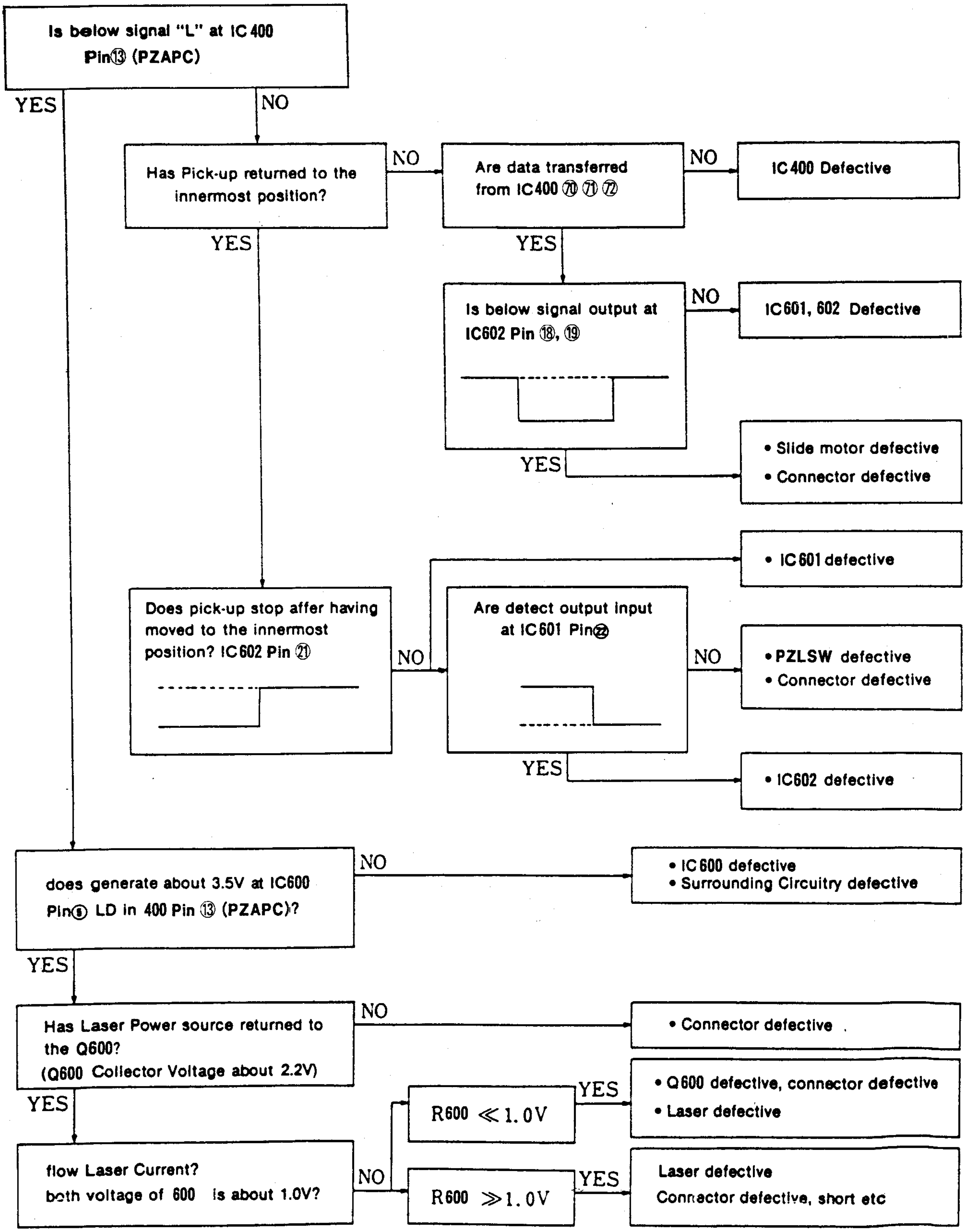
(1) If display LCD lighting is not normal

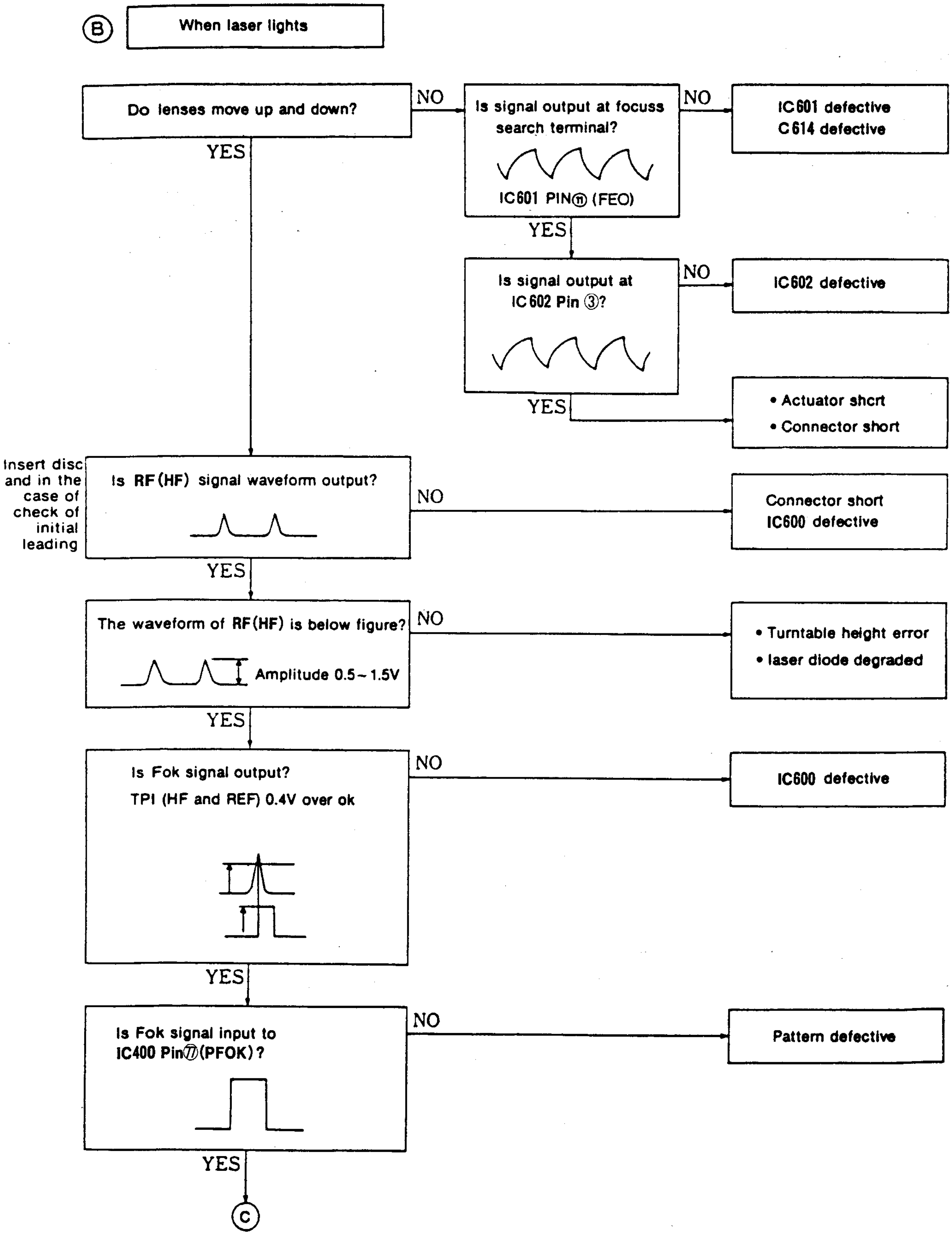

CD Fuction Select
(WITHOUT DISC)
Do display LCD then light?
NO
Check voltage in the power supply circuitry
NO
• Power supply circuitry defective
YES
Is μ-COM IC400 reset circuit normal? Pin (60)
2.7V
0V
NO
• Reset Circuit defective
• Surrounding circuit defective
YES
Is μ-COM IC401 C.L.K terminal Pin (59) (OSC) in put?
about 0.25 μsec
NO
• C427, 428 defective
• X400 defective
YES
Is IC400 ⑱ to ⑳ output waveform normal?
5V
NO
• Pattern defective
YES
Is IC400 Pin ㊸ output waveform normal?
NO
• Pattern defective
YES
Display defective

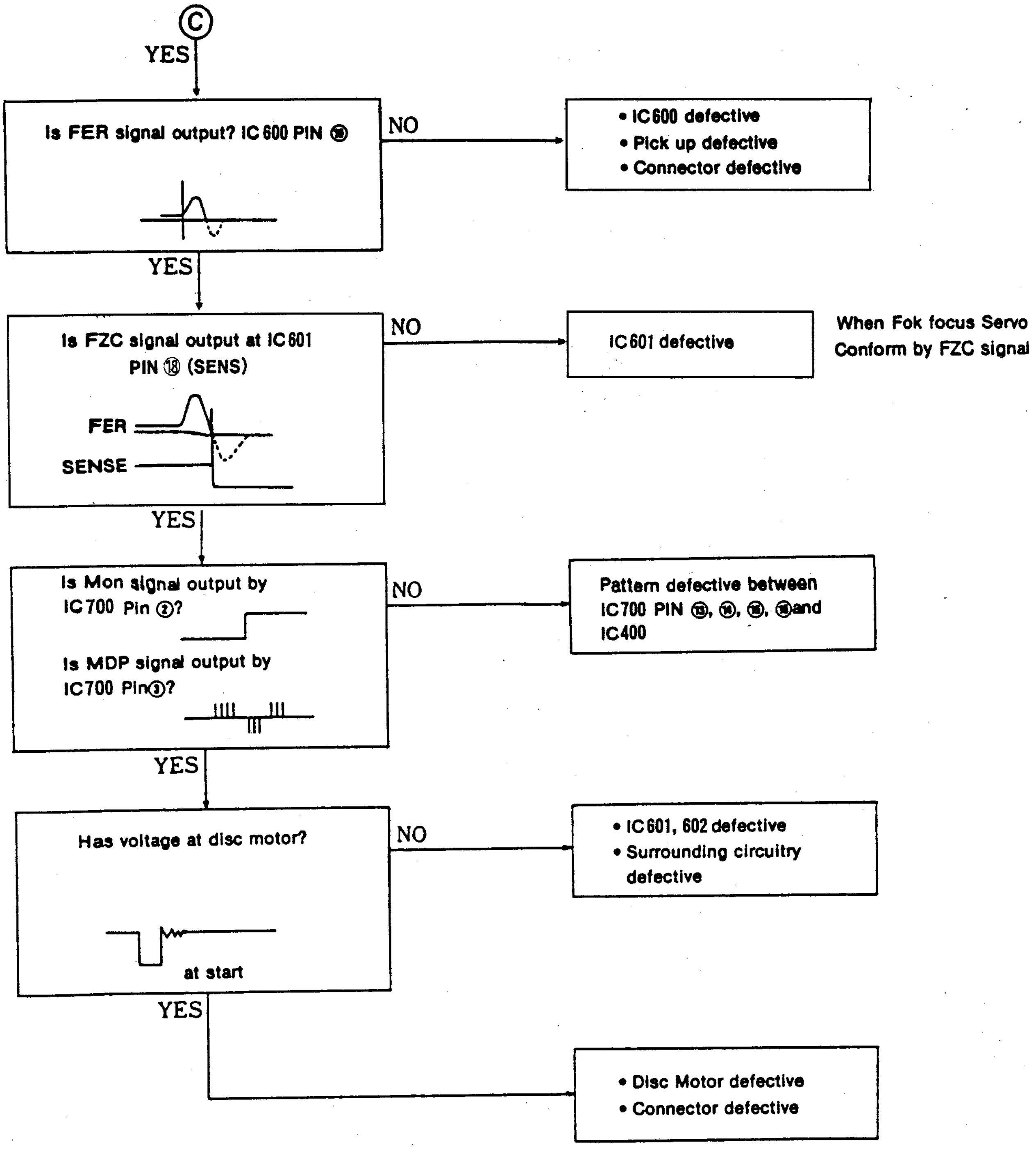
(2) If initial reading is not carried out (with disc)


Does disc motor rotate?
NO
YES
Is IC 400 Pin ⑫ output waveform normal?
IC 400⑫
OPEN
DOOR CLOSE
NO
• LEAF SW CONTACT DEFECTIVE
• CONNECTOR DEFECTIVE
• PATTERN SHORT
YES
Does laser light?
NO
A
YES
B
Is HF wave output?
RF
NO
Is tracking servo operating?
Is the lower envelope of RF waveform flat?
NO
Is signal output at TEI ?
NO
Is TER signal output, at IC600 PIN㉘?
NO
• IC600 DEFECTIVE
• CONNECTOR DEFECTIVE
• PICK UP DEFECTIVE
YES
• PATTERN DEFECTIVE
YES
Is signal output at tracking output IC 602 Pin㉖?
IC602 PIN㉖ waveform
NO
IC601, IC602 DEFECTIVE
YES
PICK UP DEFECTIVE
CONNECTOR DEFECTIVE
YES
Is rotation normal?
Is there any irregularity in frequency?
NO
does IC700 PIN㉖ (GFS) as figure?
NO
IC502 DEFECTIVE
YES
Is HF signal normal without dropout?
NO
• Disc initial reading damged or defective
YES
Disc defective

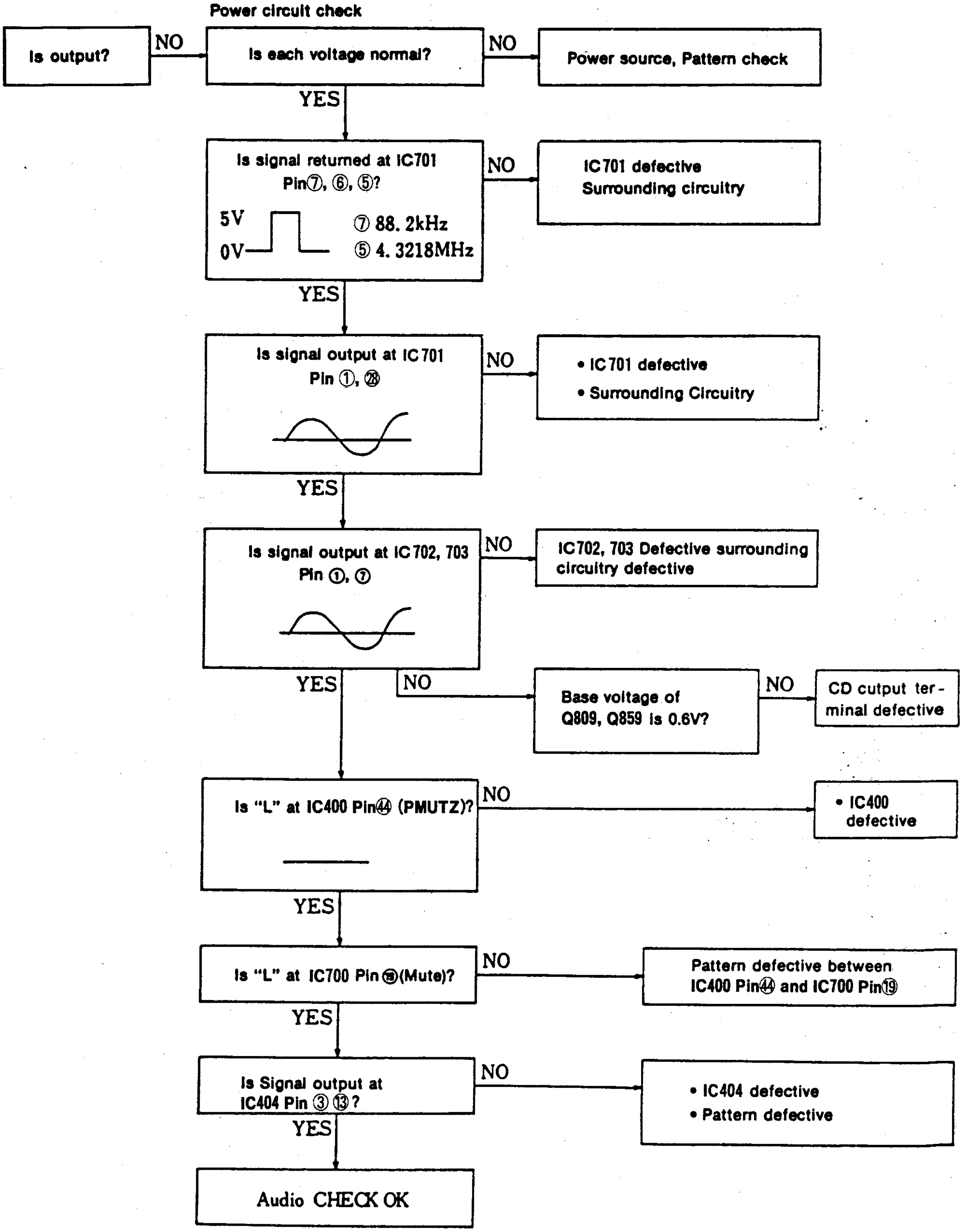
Ⓐ When laser does not light


Is below signal "L" at IC400 Pin⑬ (PZAPC)
YES
NO
Has Pick-up returned to the innermost position?
NO
Are data transferred from IC400 ⑰⑱⑲
NO
IC400 Defective
YES
YES
Is below signal output at IC602 Pin ⑱, ⑲
NO
IC601, 602 Defective
YES
• Slide motor defective
• Connector defective
• IC601 defective
Does pick-up stop affer having moved to the innermost position? IC602 Pin ㉑
NO
Are detect output input at IC601 Pin㉒
NO
• PZLSW defective
• Connector defective
YES
• IC602 defective
does generate about 3.5V at IC600 Pin⑧ LD in 400 Pin ⑬ (PZAPC)?
NO
• IC600 defective
• Surrounding Circuitry defective
YES
Has Laser Power source returned to the Q600? (Q600 Collector Voltage about 2.2V)
NO
• Connector defective
YES
flow Laser Current? both voltage of 600 is about 1.0V?
NO
R600 ≪1.0V
YES
• Q600 defective, connector defective
• Laser defective
R600 ≫1.0V
YES
Laser defective
Connector defective, short etc

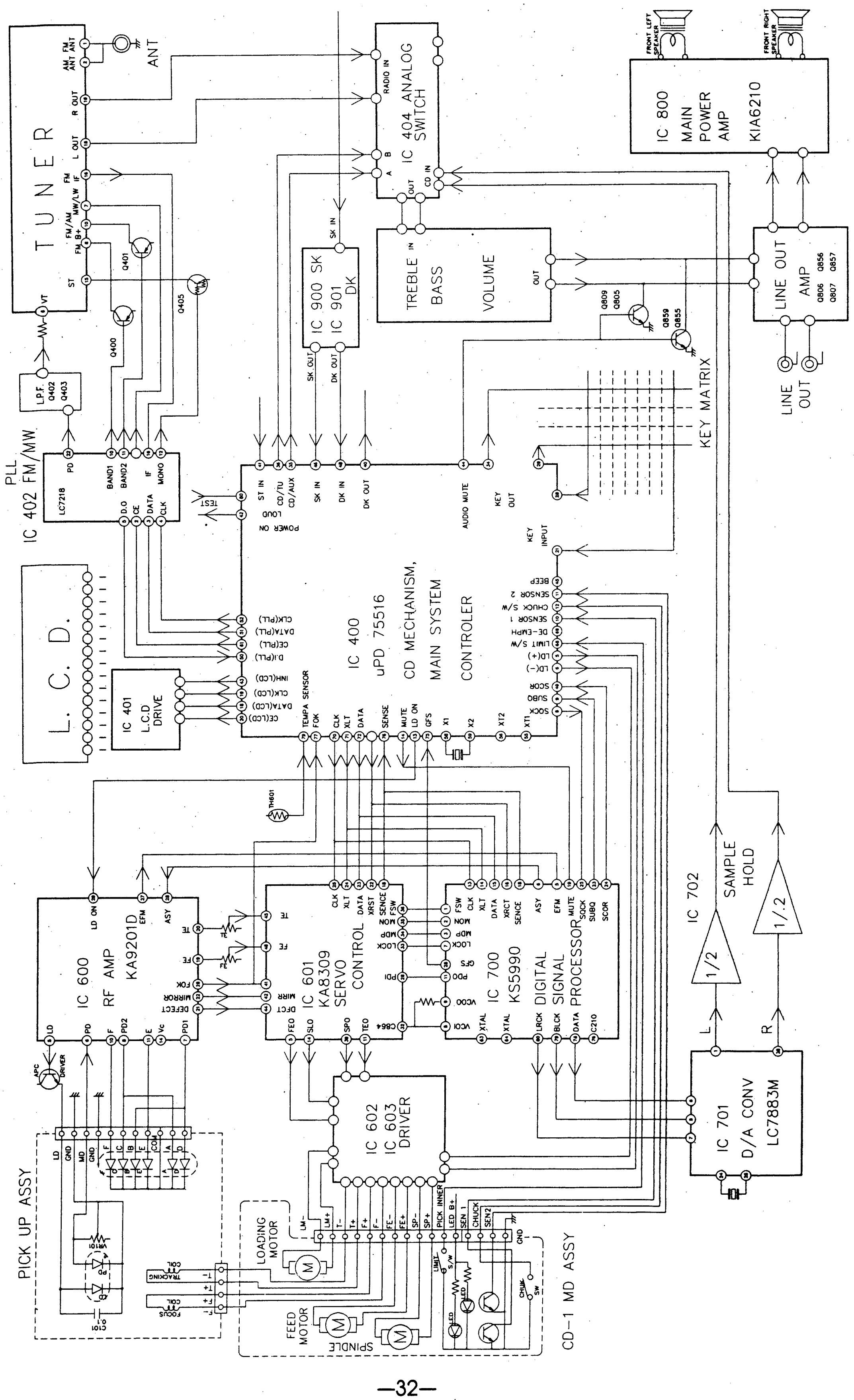

Ⓑ
When laser lights
Do lenses move up and down?
NO
Is signal output at focuss search terminal?
IC601 PIN⑪ (FEO)
NO
IC601 defective
C614 defective
YES
YES
Is signal output at IC602 Pin ③?
NO
IC602 defective
YES
• Actuator shcrt
• Connector short
Insert disc and in the case of check of initial leading
Is RF(HF) signal waveform output?
NO
Connector short
IC600 defective
YES
The waveform of RF(HF) is below figure?
Amplitude 0.5~1.5V
NO
• Turntable height error
• laser diode degraded
YES
Is Fok signal output?
TPI (HF and REF) 0.4V over ok
NO
IC600 defective
YES
Is Fok signal input to IC400 Pin⑦(PFOK)?
NO
Pattern defective
YES
Ⓒ


Ⓒ
YES
Is FER signal output? IC 600 PIN [illegible]
NO
• IC600 defective
• Pick up defective
• Connector defective
YES
Is FZC signal output at IC601 PIN ⑱ (SENS)
FER
SENSE
NO
IC601 defective
When Fok focus Servo Conform by FZC signal
YES
Is Mon signal output by IC700 Pin ②?
Is MDP signal output by IC700 Pin③?
NO
Pattern defective between IC700 PIN ⑬, ⑭, ⑮, ⑯and IC400
YES
Has voltage at disc motor?
at start
NO
• IC601, 602 defective
• Surrounding circuitry defective
YES
• Disc Motor defective
• Connector defective

Audio CHECK


Power circuit check
Is output?
NO
Is each voltage normal?
NO
Power source, Pattern check
YES
Is signal returned at IC701 Pin⑦, ⑥, ⑤?
5V
0V
⑦ 88. 2kHz
⑤ 4. 3218MHz
NO
IC701 defective
Surrounding circuitry
YES
Is signal output at IC701 Pin ①, ㉘
NO
• IC701 defective
• Surrounding Circuitry
YES
Is signal output at IC702, 703 Pin ①, ⑦
NO
IC702, 703 Defective surrounding circuitry defective
YES
NO
Base voltage of Q809, Q859 is 0.6V?
NO
CD cutput ter-minal defective
Is "L" at IC400 Pin㊹ (PMUTZ)?
NO
• IC400 defective
YES
Is "L" at IC700 Pin⑲(Mute)?
NO
Pattern defective between IC400 Pin㊹ and IC700 Pin⑲
YES
Is Signal output at IC404 Pin ③ ⑬ ?
NO
• IC404 defective
• Pattern defective
YES
Audio CHECK OK

BLOCK DIAGRAM


TUNER
ANT
L. C. D.
IC 401 LCD DRIVE
PLL IC 402 FM/MW LC7218
L.P.F. Q402 Q403
IC 900 SK IC 901 DK
IC 404 ANALOG SWITCH
TREBLE BASS VOLUME
IC 400 uPD 75516 CD MECHANISM, MAIN SYSTEM CONTROLER
KEY MATRIX
IC 800 MAIN POWER AMP KIA6210
FRONT LEFT SPEAKER
FRONT RIGHT SPEAKER
LINE OUT AMP Q856 Q806 Q857 Q807
LINE OUT
IC 702 SAMPLE HOLD
1/2
IC 701 D/A CONV LC7883M
IC 600 RF AMP KA9201D
IC 601 KA8309 SERVO CONTROL
IC 700 KS5990 DIGITAL SIGNAL PROCESSOR
IC 602 IC 603 DRIVER
PICK UP ASSY
LOADING MOTOR
FEED MOTOR
SPINDLE
CD-1 MD ASSY
TRACKING COIL
FOCUS COIL
Q400
Q401
Q405
Q850 Q805
Q855 Q859

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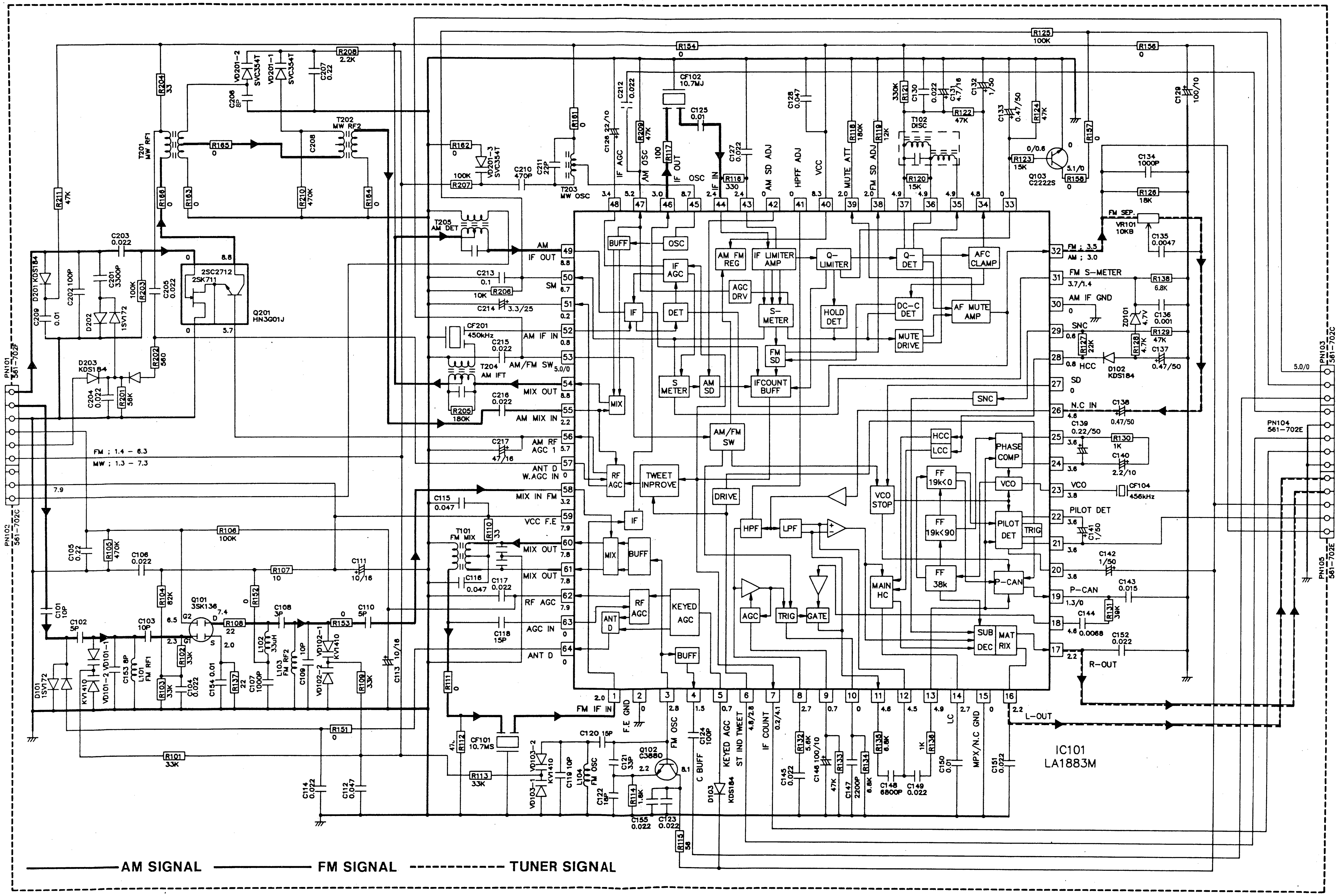
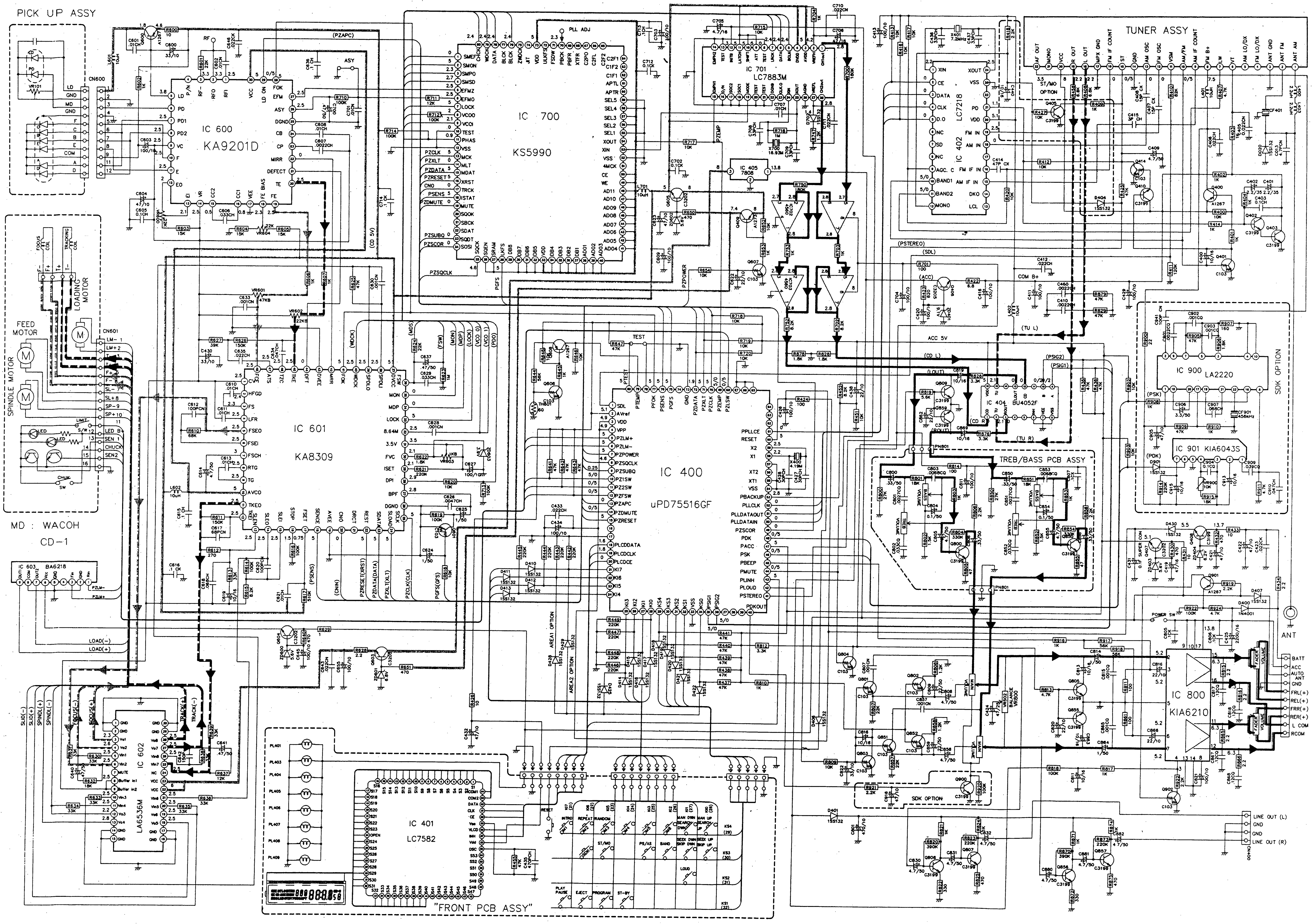
SCHEMATIC DIAGRAM

● TUNER SECTION


PN101 561-702F
PN102 561-702C
AM ANT
FM ANT
ANT GND
FM LO/DX
AM LO/DX
VT
N.C
FM B+
AM IF-OUT
FM : 1.4 - 6.3
MW : 1.3 - 7.3
T201 MW RF1
T202 MW RF2
VD201-2 SVC354T
VD201-1 SVC354T
VD201-3 SVC354T
Q201 HN3G01J
2SC2712
2SK711
D201 KDS184
D203 KDS184
D202 1SV172
Q101 3SK136
T101 FM MIX
L101 FM RF1
L103 FM RF2
L102 33UH
L104 FM OSC
D101 1SV172
VD101-1 KV1410
VD101-2 KV1410
VD102-1 KV1410
VD102-2 KV1410
VD103-1 KV1410
VD103-2 KV1410
Q102 C3880
D103 KDS184
CF101 10.7MS
CF102 10.7MJ
CF201 450kHz
CF104 456kHz
T203 MW OSC
T204 AM IFT
T205 AM DET
T102 DISC
Q103 C2222S
D102 KDS184
ZD101 4.7V
VR101 10KB
FM SEP.
AM IF OUT
SM
AM IF IN
AM/FM SW
MIX OUT
AM MIX IN
AM RF AGC 1
ANT D W.AGC IN
MIX IN FM
VCC F.E
MIX OUT
RF AGC
AGC IN
ANT D
FM IF IN
F.E GND
FM OSC
C BUFF
KEYED AGC
ST IND TWEET
IF COUNT
LC
MPX/N.C GND
IF AGC
AM OSC
IF OUT
IF OSC
IF IN
AM SD ADJ
HPFF ADJ
VCC
MUTE ATT
FM SD ADJ
FM : 3.5
AM : 3.0
FM S-METER
AM IF GND
SNC
HCC
SD
N.C IN
VCO
PILOT DET
P-CAN
R-OUT
L-OUT
BUFF
OSC
IF AGC
AM FM REG
IF LIMITER AMP
Q-LIMITER
Q-DET
AFC CLAMP
AGC DRV
IF
DET
S-METER
HOLD DET
DC-C DET
AF MUTE AMP
MUTE DRIVE
FM SD
S METER
AM SD
IFCOUNT BUFF
MIX
SNC
AM/FM SW
RF AGC
TWEET INPROVE
DRIVE
VCO STOP
HCC
LCC
PHASE COMP
FF 19k<0
FF 19k<90
FF 38k
PILOT DET
TRIG
P-CAN
HPF
LPF
MAIN HC
AGC
GATE
KEYED AGC
ANT D
SUB DEC
MAT RIX
IC101 LA1883M
PN103 561-702C
PN104 561-702E
PN105 561-702E
FM/AM SW
VSM
FM OSC
AM OSC
GND
ST IND
IF COUNT
GND
L-OUT
R-OUT
VCC
ST/MO
AF OUT
5.0/0
AM SIGNAL
FM SIGNAL
TUNER SIGNAL

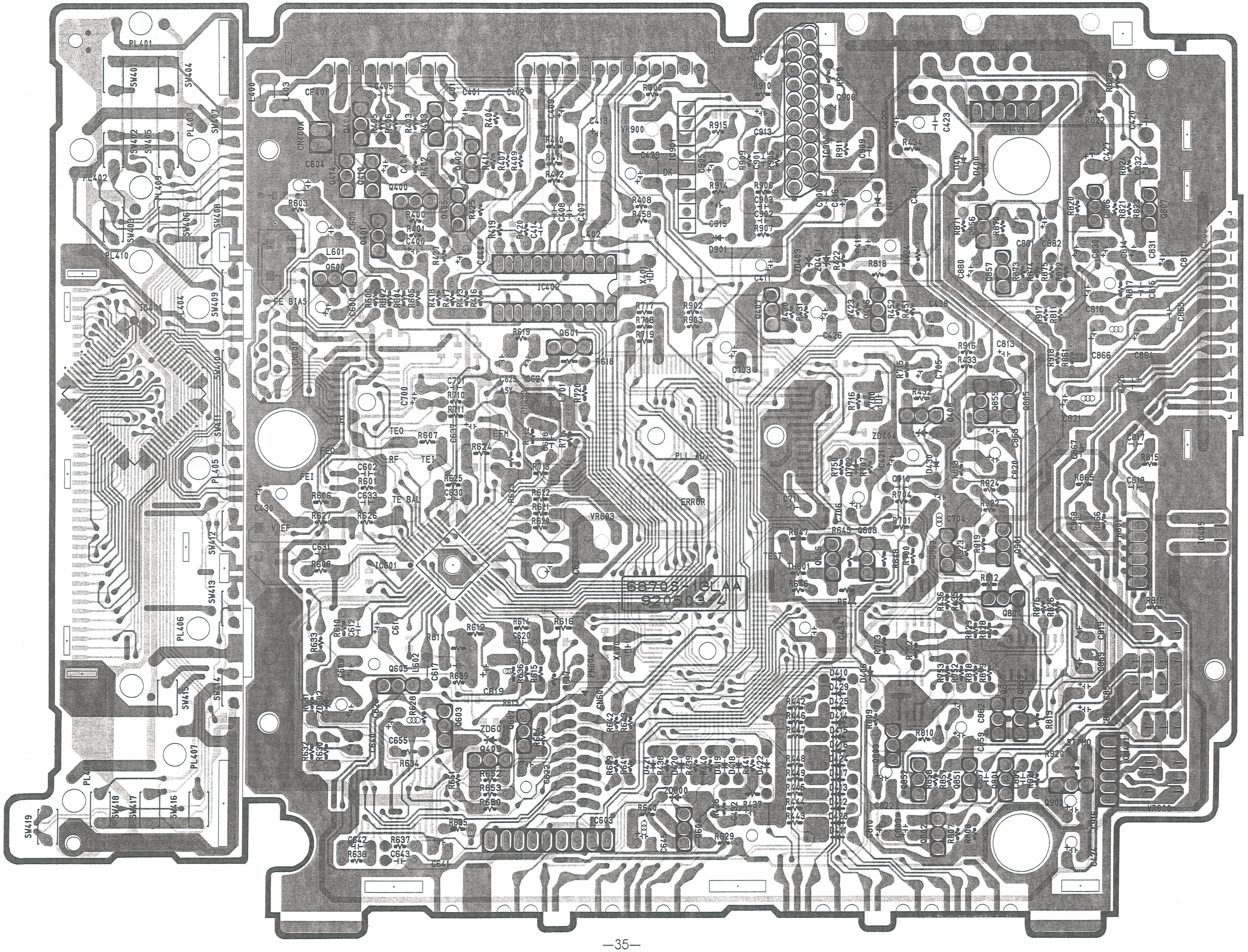
●CDP SECTION


PICK UP ASSY
CN600
IC 600 KA9201D
IC 700 KS5990
IC 701 LC7883M
IC 402 LC7218
TUNER ASSY
IC 405 7808
IC 601 KA8309
IC 400 uPD75516GF
IC 404 BU4052F
IC 900 LA2220
SDK OPTION
IC 901 KIA6043S
TREB/BASS PCB ASSY
IC 800 KIA6210
FEED MOTOR
LOADING MOTOR
SPINDLE MOTOR
CN601
MD : WACOH
CD-1
IC 603 BA6218
IC 602 LA6536M
IC 401 LC7582
"FRONT PCB ASSY"
ANT
LINE OUT (L)
GND
GND
LINE OUT (R)
ACC 5V
COM B+
AREA1 OPTION
AREA2 OPTION
POWER SW
BATT
ACC
AUTO ANT
GND
FRL(+)
REL(+)
FRR(+)
RER(+)
L COM
RCOM

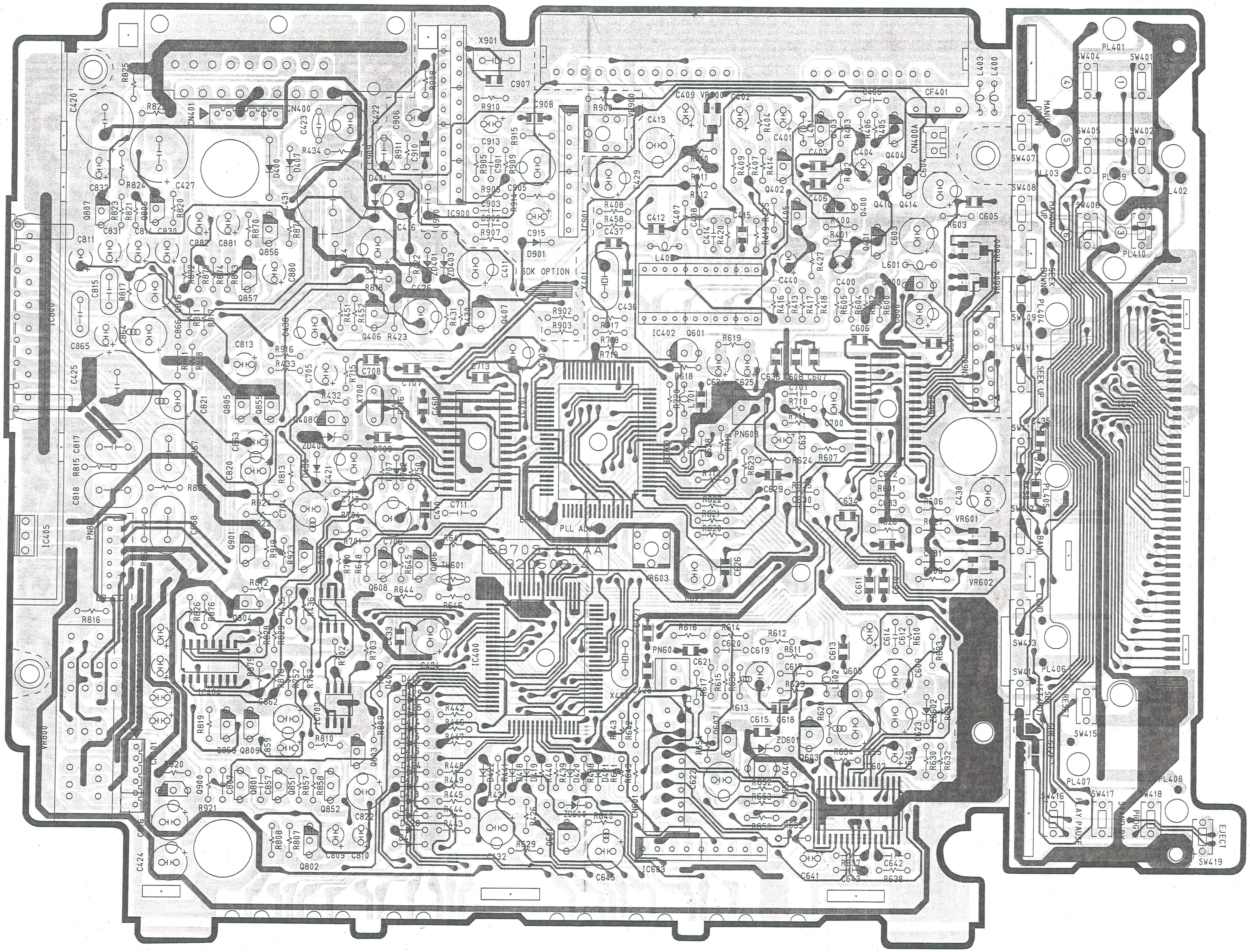
FOCUS SIGNAL TRACKING SIGNAL B^+ TUNER SIGNAL CD SIGNAL COMMON SIGNAL

PCB LAYOUT

●MAIN P.C. BOARD (TOP VIEW)

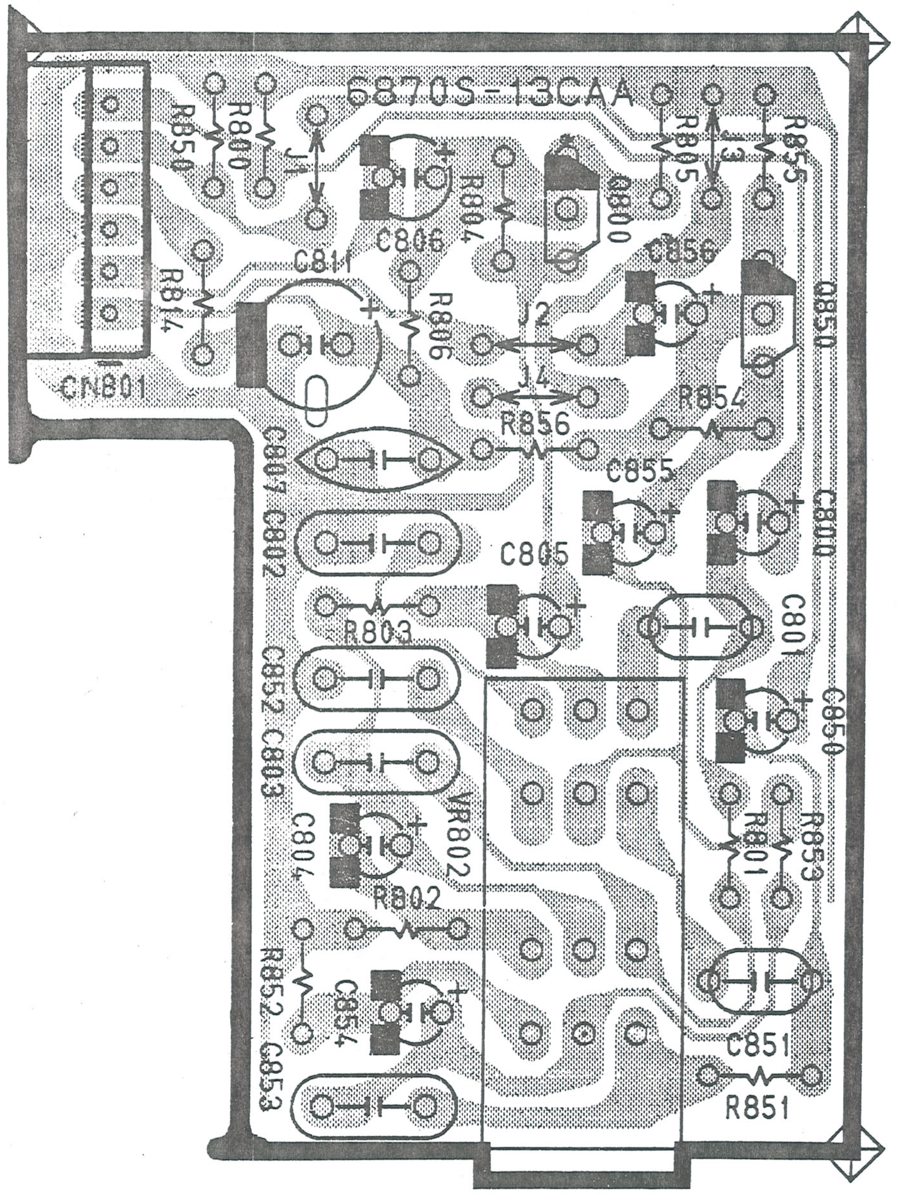


●MAIN P.C. BOARD (BOTTOM VIEW)

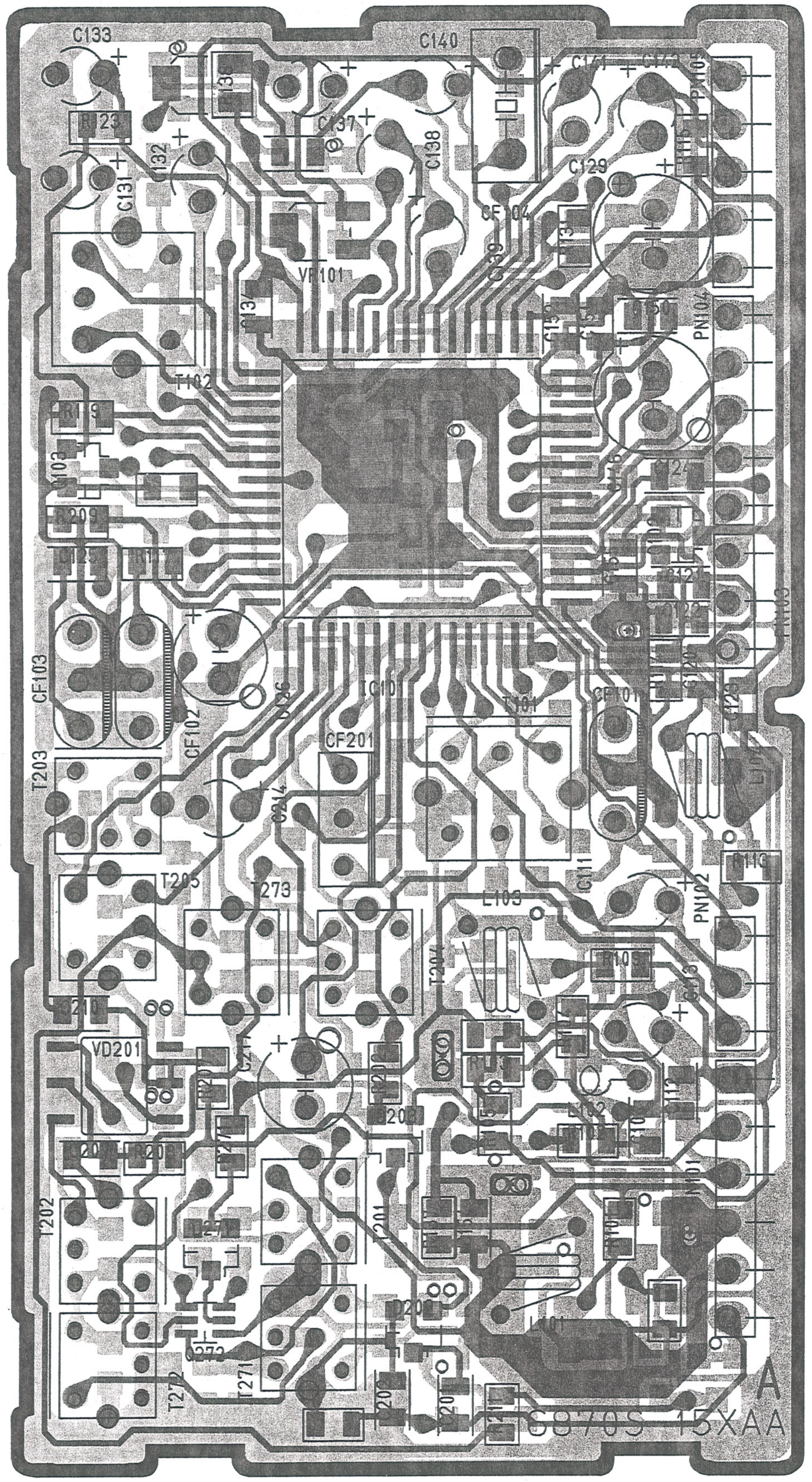

X901
C907
R825
CN400
CN401
C420
R910
C908
R900
VR900
C409
C402
C405
CF401
L403
L400
PL401
SW404
SW401
MANUAL DOWN
SW405
SW402
SW407
PL403
PL409
L402
SW408
SW406
PL410
SEEK DOWN
PL404
SW409
SW410
SEEK UP
C435
PL405
BAND
SW412
SW413
PL406
SW414
RESET
SW415
PL407
PL408
SW416
PLAY PAUSE
SW417
SW418
PROG
EJECT
SW419
C423
R434
D400
D401
C427
R824
C832
Q807
C831
C811
C815
R817
C865
C864
C866
C425
IC800
C817
R815
C818
IC405
PN8
R816
VR800
C424
Q802
R808
R807
C809
C810
C822
Q852
Q851
R857
R858
C857
Q801
C804
Q900
R921
R920
R819
Q808
Q809
C859
R810
C862
IC404
R826
R876
Q804
R828
R829
R835
R436
R812
R702
R703
C433
C434
IC400
C705
R432
X700
C708
C707
C713
C706
R645
Q606
TH601
R646
R644
Q608
R648
R700
R701
ZD404
Q408
C421
R704
C711
C714
R921
R922
R923
Q901
C868
C820
C853
R813
C821
Q805
Q855
C813
R916
R433
Q857
C880
Q856
R870
C881
C882
R871
C431
C416
C419
R818
R451
R452
Q406
R423
C426
R431
R430
Q407
ZD403
ZD401
R911
C906
C910
R905
C901
R909
R906
R915
C905
C903
C913
C902
R907
IC900
C915
D901
C411
GDK OPTION
R902
R903
IC901
R408
R458
C437
C412
C407
C408
C436
R717
R718
R719
L400
IC402
Q601
R619
R618
R709
L701
C624
C625
C635
C608
C607
R710
Q700
PN603
C631
R624
R607
C629
R622
R621
R620
ERROR
PLL ADJ
C6870S-7JLAA
92050S-4
VR603
C626
C611
C606
C601
R601
C603
R626
C430
R606
VR601
R627
VR602
C609
Q600
R616
R614
R612
PN601
C620
C619
C621
R611
C613
C614
C612
R610
R617
R615
R613
C615
Q618
ZD601
Q603
R634
C622
R652
R653
R650
R655
R637
C641
C643
R638
C642
IC603
C645
C432
R629
ZD600
R640
R449
R445
R444
R443
R448
R442
R446
R447
R413
R410
R411
R412
C413
C401
R404
R406
R405
Q403
Q404
CN400A
C404
C403
C406
R400
R401
Q400
Q410
Q414
R603
C605
C600
L601
C440
R427
R416
R417
R418
R405
R604
R602
R600
C604
R409
R407
R414
Q402
R420
C445
C414

-36-

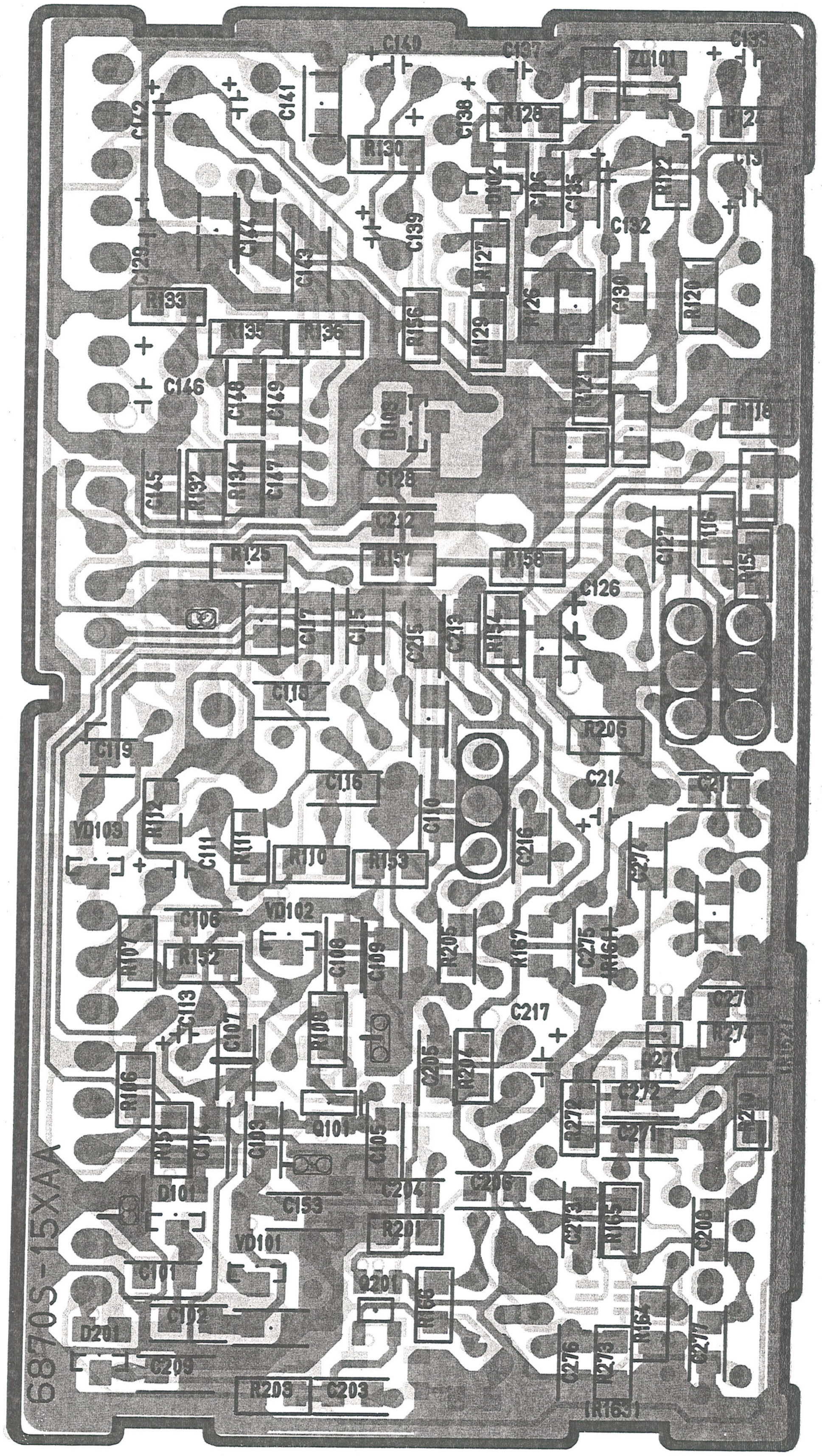
● TREBLE/BASS P.C. BOARD


6870S-13CAA
CN801
R850
R800
J1
R804
Q800
R805
J3
R855
C806
C811
R814
C856
R806
J2
J4
Q850
R854
R856
C807
C855
C802
C805
C800
R803
C801
C852
C803
C850
VR802
R801
R853
C804
R802
R852
C854
C853
C851
R851

● TUNER P.C. BOARD (TOP VIEW)


C133
C140
C137
C138
C131
C129
CF104
VR101
T102
PN104
CF103
CF102
IC101
CF201
T101
CF101
T203
T205
T273
L103
PN102
VD201
T202
T201
T272
T271
A
6870S-15XAA

● TUNER P.C. BOARD (BOTTOM VIEW)


C140
C137
ZD101
C133
C142
C141
C138
R128
R125
R130
C131
D102
C136
C135
R122
C144
C143
C139
C132
C129
R127
R133
R126
C130
R120
R129
R131
R135
R136
C146
C148
C149
D103
R124
R118
C145
R132
R134
C147
C128
C212
C127
R116
R115
R157
R158
C126
C117
C115
C215
C213
R117
C118
R206
C119
C116
C214
C211
VD103
R112
C111
R111
R110
R153
C110
C216
C277
VD102
C106
R101
R152
C108
C109
R205
R167
C275
C113
C107
R108
C217
C278
R274
R271
C205
R207
C272
R106
Q103
Q101
C105
R272
C271
D101
C153
C204
C206
C273
R165
VD101
R201
C101
Q201
R166
C102
R164
D201
C209
C276
R273
R163
R209
C203
6870S-15XAA

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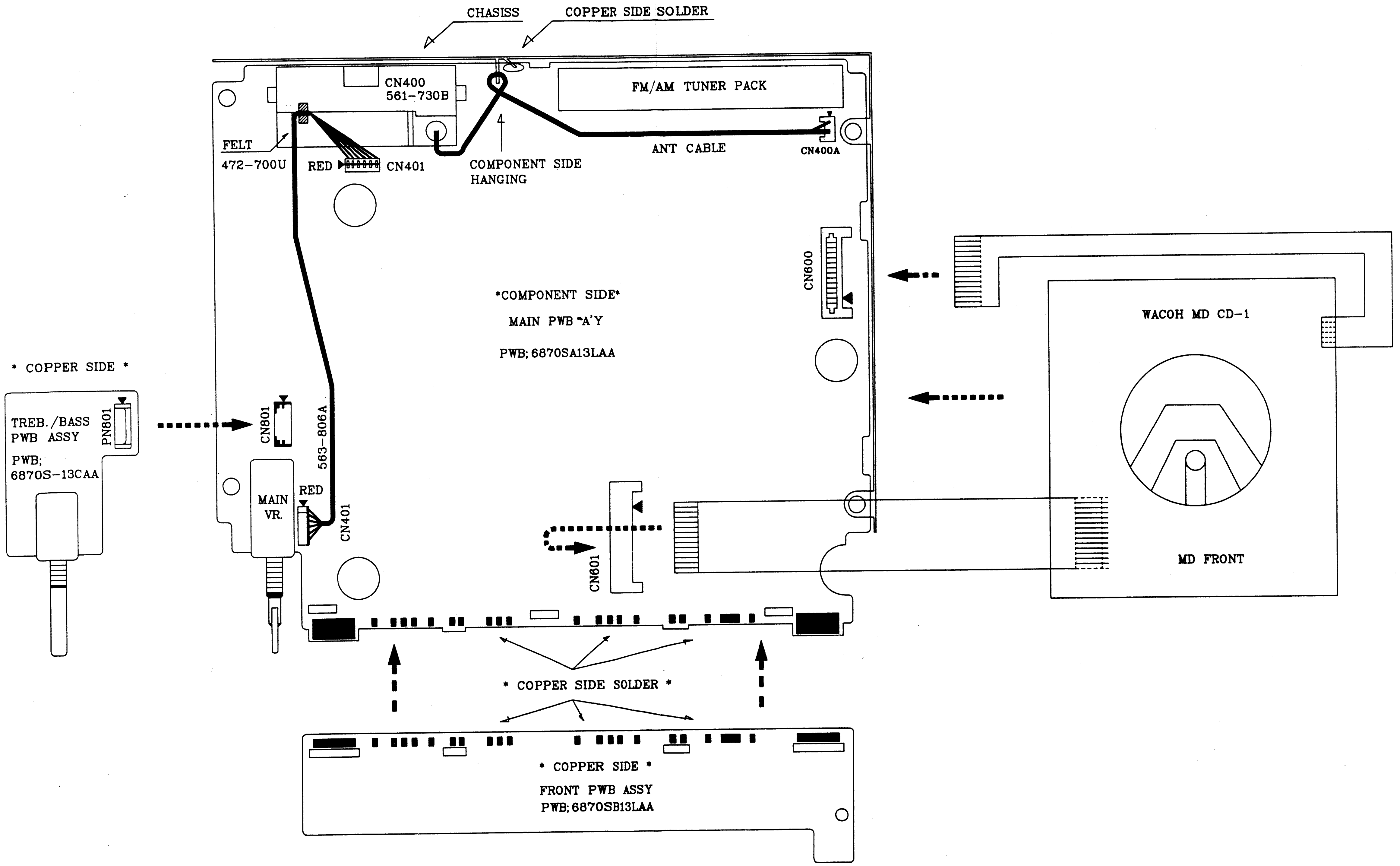
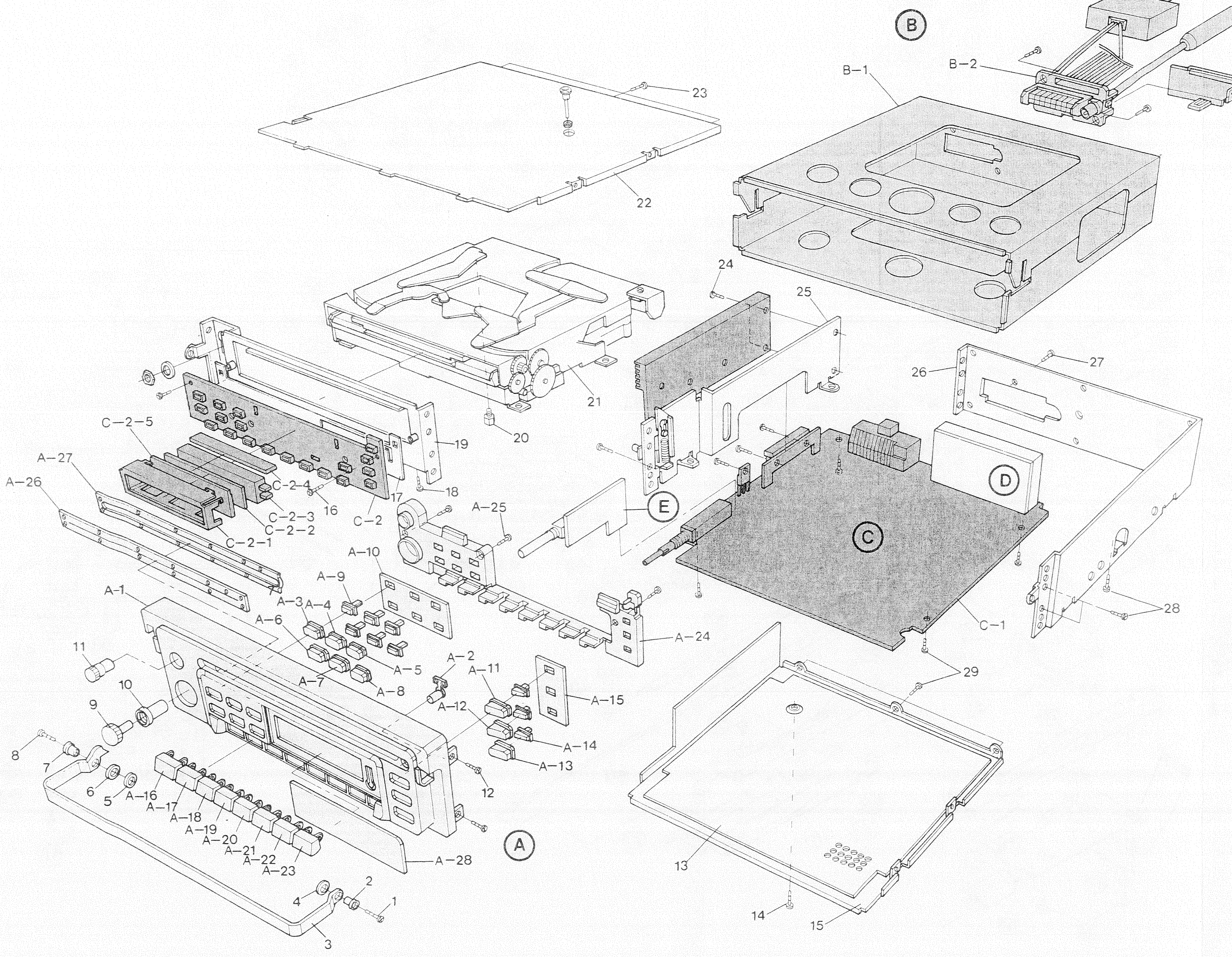
WIRING DIAGRAM


CHASISS
COPPER SIDE SOLDER
CN400
561-730B
FM/AM TUNER PACK
FELT
472-700U
RED
CN401
COMPONENT SIDE
HANGING
ANT CABLE
CN400A
CN600
COMPONENT SIDE
MAIN PWB A'Y
PWB; 6870SA13LAA
WACOH MD CD-1
* COPPER SIDE *
TREB./BASS
PWB ASSY
PN801
PWB;
6870S-13CAA
CN801
563-806A
MAIN
VR.
RED
CN401
CN601
MD FRONT
* COPPER SIDE SOLDER *
* COPPER SIDE *
FRONT PWB ASSY
PWB; 6870SB13LAA

EXPLODED VIEW & PARTS LIST

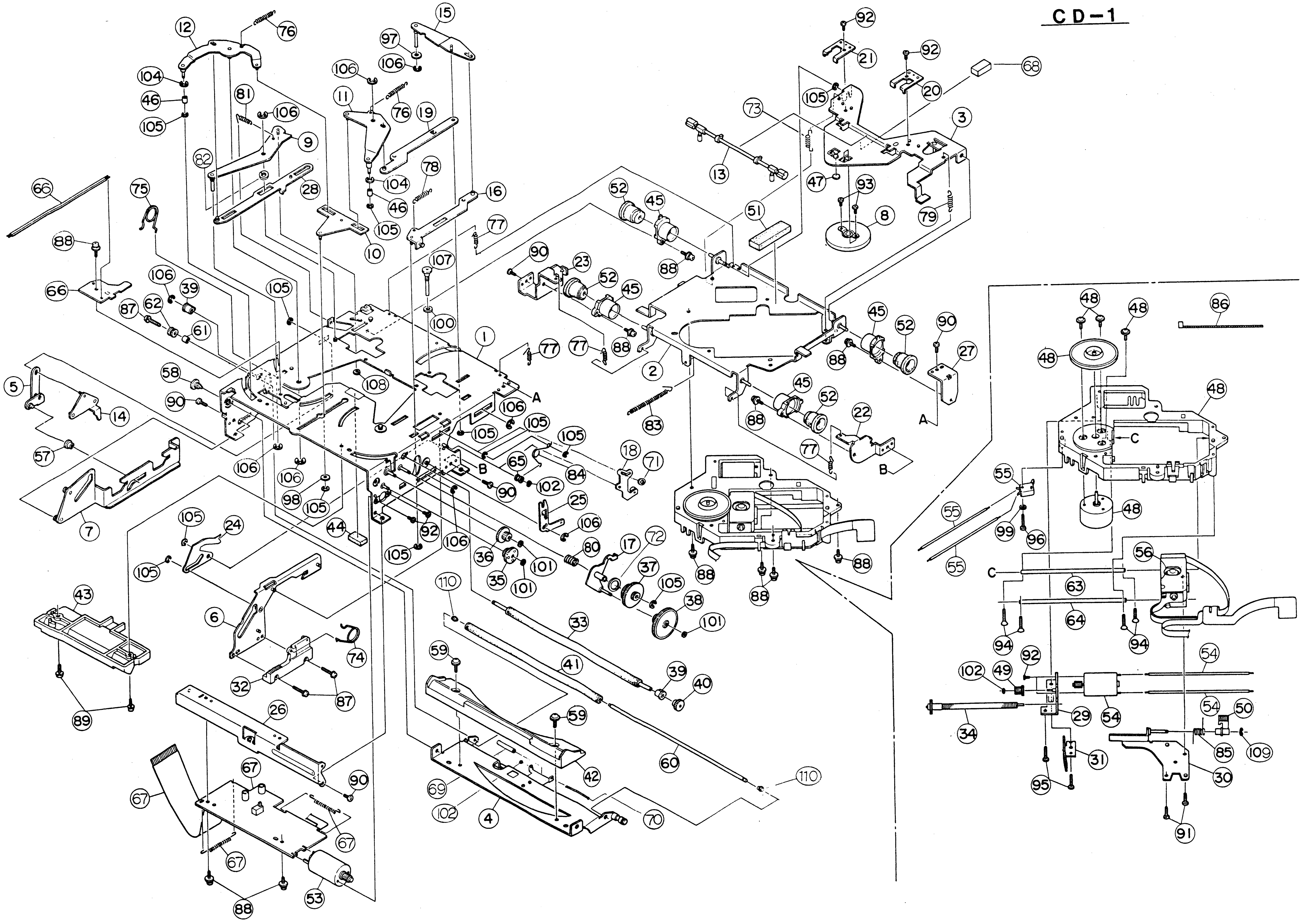
●CABINET



Ref.No.	Part No.	Description
A	3721S-0055G	Front Panel Ass'y
A-1	3720S-0055G	Front Panel
A-2	4940S-0055A	Knob Eject
A-3	4940S-0056A	Knob 1
A-4	4940S-0056B	Knob 2
A-5	4940S-0056C	Knob 3
A-6	4940S-0056D	Knob 4
A-7	4940S-0056E	Knob 5
A-8	4940S-0056F	Knob 6
A-9	324-955A	Holder Knob
A-10	447-060A	Cushion Knob
A-11	4940S-0057A	Function PROG
A-12	4940S-0057B	Function STBY
A-13	4940S-0057C	Function PLAY/PAUSE
A-14	324-956A	Holder Knob
A-15	447-061A	Cushion Knob
A-16	4940S-0058A	Knob S/M Down
A-17	4940S-0058B	Knob S/M Up
A-18	4940S-0058C	Knob S/S Down
A-19	4940S-0058D	Knob S/S Up
A-20	4940S-0058E	Knob PS/AS
A-21	4940S-0058F	Knob Band
A-22	4940S-0058G	Knob Loud
A-23	4940S-0058J	Knob ST/MO
A-24	464-056A	Reflector Main
A-25	1TBH0202018	Screw 2×6
A-26	472-055A	Felt Slot
A-27	4810S-0055A	Bracket Slot
A-28	236-498A	Window LCD
B	215-795A	Mother Case Ass'y
B-1	217-799A	Mother Case
B-2	563-953A	Connector Ass'y
C	6871S-13LAD	Total PCB Ass'y
C-1	6871SA13LAD	Main PCB Ass'y
C-2	6871SB13LAD	Front PCB Ass'y
C-2-1	219-550A	Housing LCD
C-2-2	231-820C	Sheet LCD
C-2-3	464-055A	Reflector LCD
C-2-4	563-001V	Connector Ass'y
C-2-5	659-143F	Display
D	6871S-15XAB	Tuner PCB Ass'y
E	6871S-13CAD	Treble/Bass PCB Ass'y
1	1MCC0262416	Screw 2.6×8
2	341-183A	Bushing
3	261-955A	Handle
4	341-334A	Bushing
5	341-334A	Bushing
6	354-180B	Washer
7	341-183A	Bushing
8	1MCC0262416	Screw 2.6×8
9	272-044A	Knob Volume
10	272-043A	Knob Fader
11	272-045A	Knob Bass/Treble
12	353-022I	Screw 2.6×4
13	256-955A	Plate Insulation
14	353-022I	Screw 2.6×4
15	221-956A	Cover Botton
16	353-022F	Screw 2×6
17	256-535A	Plate Insulation
18	353-022I	Screw 2.6×4
19	3140S-0055A	Chassis Front
20	423-055A	Shaft MD
21	411-007A	CD Mechanism
22	221-955A	Cover Top
23	353-022I	Screw 2.6×4
24	IMCC0262416	Screw 2.6×8
25	3140S-0057A	Chassis Side Ass'y
26	3140S-0056F	Chassis Main
27	1TPL0302020	Screw 3×6
28	353-0221	Screw 2.6×4
29	353-0221	Screw 2.6×4

● CD MECHANISM

CD－1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Ref.No.	Part No.	Description
—	411-007A	CD-1 TCH-55 WACOH
1	88W-0001	CHASSIS ASSY
2	88W-0002	PICK BASE INTLLING
3	88W-0003	CHUCK ARM ASSY
4	88W-0004	UP LEVER ASSY
5	88W-0005	CHANGE LEVER ASSY
6	88W-0006	DOWN LEVER (R) ASSY
7	88W-0007	DOWN LEVER (L) ASSY
8	88W-0008	CHAUCK CONSTRUCION
9	88W-0009	SENSOR LEVER ASSY
10	88W-0010	DISC CHANGE PLATE ASSY
11	88W-0011	DISC CHANGE ARM (R) A'Y
12	88W-0012	DISC CHANGE ARM (L) A'Y
13	88W-0013	DISC STOPPER
14	88W-0014	PICK LOCK LEVER (L) A'Y
15	88W-0015	SET START ARM AY
16	88W-0016	LOCK CAN CELLATION LEVER
17	88W-0017	SET GEAR ARM AY
18	88W-0018	CHUCK ARM UP LEVER AY
19	88W-0019	SET ARM ACTION LEVER
20	88W-0020	STOPPER SP PLATTE (R)
21	88W-0021	STOPPER SP PLATTE (L)
22	88W-0022	DAMPER BKT (FR)
23	88W-0023	DAMPER BKT (FL)
24	88W-0024	PICK LOCK LEVER (R)
25	88W-0025	LOCK LEVER
26	88W-0026	FEINFORCEMENT AUGLE
27	88W-0027	DAMPER BKT (BL)
28	88W-0028	SENSOR LOCK PLATE AY
29	88W-0029	FEED MOTOR COVER AY
30	88W-0030	FEED PLATE AY
31	88W-0031	FEED GEAR SP PLATE
32	88W-0032	DOWN RACK CONSTRUCION
33	88W-0033	OLADING ROLLER (A) CON.
34	88W-0034	FEEL GEAR (A) CON.
35	88W-0035	LOADING GEAR (A)
36	88W-0036	LOADING GEAR (B)
37	88W-0037	LOADING GEAR (C)
38	88W-0038	SET GEAR
39	88W-0039	METAL
40	88W-0040	LOADING ROLLER GEAR
41	88W-0041	LOADING ROLLER (B)
42	88W-0042	DISC GUIDE UNDER
43	88W-0043	DISC GUIDE TOP
44	88W-0044	CHUCK HOLD
45	88W-0045	DAMPER CASE
46	88W-0046	DISC CHANGE COLLAR
47	88W-0047	CHUCK POLYS
48	88W-0048	PICK BASE
49	88W-0049	FEED GEAR (B)
50	88W-0050	FEED TIP
51	88W-0051	CHUCK FUBBER
52	88W-0052	DAMPER ASSY
53	88W-0053	LOADING MOTOR ASSY
54	88W-0054	FEED MOTOR ASSY
55	88W-0055	LEAF SW SUB ASSY
56	88W-0056	OPTICAL PICK UP
57	88W-0057	CHANGE LEVER SHAFT
58	88W-0058	UP LEVER SCREW
59	88W-0059	GUIDE UNDER SCREW
60	88W-0060	ROLLER SHAFT (B)
61	88W-0061	UP SHAFT COLLER
62	88W-0062	UP SHAFT (L)
63	88W-0063	MAIN PICK SHAFT
64	88W-0064	SUB PICK SHAFT
65	88W-0065	SPRING COLLAR
66	88W-0066	SENSOR PWB SUB ASSY
67	88W-0067	MAIN PWB SUB ASSY
68	88W-0068	GUIDE RUBBER
69	88W-0069	GUIDE ROLLER
70	88W-0070	ROLLER SHAFT
71	88W-0071	F//W 2×5×0.3
72	88W-0072	SET GEAR FELT
73	88W-0073	CHUCK ARM SUB SPR
74	88W-0074	RACK TORSION SPR
75	88W-0075	UP SPRING (L)
76	88W-0076	DISC CHANGE ARM SPR
77	88W-0077	DAMPER SPRING
78	88W-0078	LOCK CANCELLATION LESP
79	88W-0079	CHUCK ARM SPR
80	88W-0080	SET GEAR ARM SPRING
81	88W-0081	SENSOR LEVER SPRING
82	88W-0082	P/W 2.6×5×0.13
83	88W-0083	DAMPER SUB SPRING
84	88W-0084	LEVER TRUN SPRING
85	88W-0085	FEED TIP SPRING
86	88W-0086	CABLE BELT (SG-80)
87	88W-0087	SMP SEMS2×8
88	88W-0088	SMP W-SEMS2×5
89	88W-0089	SMP SEMS2×4
90	88W-0090	SMB 2×3
91	88W-0091	1P 2×4
92	88W-0092	1P 2×2.2
93	88W-0093	3P 1.7×2
94	88W-0094	PTE 2×8
95	88W-0095	PTP 2×10
96	88W-0096	PT3P 1.7×12
97	88W-0097	F/W 3×7×0.3
98	88W-0098	F/W 3×6×0.3
99	88W-0099	F/W 1.783.8×0.3
100	88W-00100	P/W 2.5×5.5×0.53
101	88W-00101	P/W 1.6×3.2×0.25
102	88W-00102	P/W 1.2×3×0.25
103	88W-00103	P/W 2×4×0.25
104	88W-00104	E-RING
105	88W-00105	E-RING
106	88W-00106	E-RING
107	88W-00107	STOPPER SCREW
108	88W-00108	P/W 1.6×5×0.4
109	88W-00109	E-RING
110	88W-00110	ROLLER SHAFT BUSH

▨ : Serviceable Parts

REPLACEMENT PARTS LIST

「REPLACEMENT PARTS LIST」 PAGE : 1

MODEL : TCH-55 BR9 SET PART NO : 112-055I RUN-DATE : 92.08.18

S	AL	LOCA.NO	PART NO(GS)	DESCRIPTION	SPECIFICATION	REMARKS
			0FN1001B511	FUSE NON TIME DELAY 160%	1.0A 250V 5.2X20 G KS	
			0FN5001B511	FUSE NON TIME DELAY 160%	5.0A 250V 5.2X20 G KS	
			1BHA0503020	HEXAGON HEAD BOLT H COARSE 1	D 5.0 L 14 MSWR3/FZY	
			1MPC0302018	PAN HEAD MACHINE SCREW +	D 3.0 L 6.0 MSWR3/FZY	
			1MPC0302618	PAN HEAD MACHINE SCREW +	D 3.0 L 10 MSWR3/FZY	
			1NHB0500020	HEXAGON NUTS 2	D 5.0 NORULE MSWR3/FZW	
			1TBG0602818	BINDING HEAD TAPPING SCREW + 1	D 6.0 L 12 MSWR3/FZY	
			1TBH0202018	BINDING HEAD TAPPING SCREW + 2	D 2.0 L 6.0 MSWR3/FZY	
			1TPL0302020	PAN HEAD TAPPING SCREW + 2 CUT	D 3.0 L 6.0 MSWR3/FZW	
			1TPL0302020	PAN HEAD TAPPING SCREW + 2 CUT	D 3.0 L 6.0 MSWR3/FZW	
			1WPL0500014	PLAIN WASHER(BRIGHT ROUND)1RWA	D 5.0 SCP1/FZY	
			1WSD0500030	SPRING LOCK WASHER 2	D 5.0 SWRH4/FZY	
			215-795A	CASE ASSY	ASY HOTHER(TCH-55)	
			217-799A	CASE	MOTHER (TCH-55)	
			219-550A	HOUSING	L.C.D (TCH-55)	
			221-955A	COVER	TOP (TCH-55)	
			221-956A	COVER	BOTTOM (TCH-55)	
			231-820C	SHEET	L.C.D (TCH-55)	
			236-498A	WINDOW	L.C.D (TCH-55,CAR-CD)	
			255-055A	HEAT SINK	POWER (TCH-55)	
			256-535A	PLATE	INSULATE,FRONT(TCH-55)	
			256-955A	PLATE	INSULATION (TCH-55)	
			261-955A	HANDLE	METAL (TCH-55)	
			272-043A	KNOB VOLUME	KNOB,FADER (TCC-505)	
			272-044A	KNOB VOLUME	KNOB,VOLUME (TCC-505)	
			272-045A	KNOB VOLUME	KNOB,BASS/TREBLE (TCC-505)	
			3140S-0055A	CHASSIS	FRONT (TCH-55)	
			3140S-0056F	CHASSIS	MAIN(TCH-55 BR9,NUMBERING)	
			3140S-0057A	CHASSIS	SIDE (TCH-55) ASS'Y	
			321-378A	BRACKET	IC HOLD,SBHG 0.8T TCC-600N	
			322-820A	SUPPORTER	SUPPORTER,STRAP(RC-820)	
			324-955A	HOLDER	KNOB,PRE-SET (TCH-55)	
			324-956A	HOLDER	KNOB,FUNCTION (TCH-55)	
			341-183A	BUSHING	BUSHING HD-BSBM BK	
			341-334A	BUSHING	BUSHINNG RUBBER TCC-1800B SILI	
			353-022F	SCREW	* TAPTITE 2X6 FZMY BINDING	
			353-022I	SCREW	* TAPTITE 2.6X4 FZMY BINDING	
			354-180B	WASHER	WASHER POLYSLIDER TCC-1880	
			3720S-0055G	PANEL	FRONT(TCH-55 BR9,FM/MW/CD)	
			3721S-0055G	PANEL ASSY	FRONT(TCH-55 BR9,FM/MW,ST/MO)	
			3875S-0005K	MANUAL, OPERATION ASSY	TCH-55 (ROADSTAR)	
			411-007A	MECHANISM ASSY	CD-1 TCH-55 WACOH	
			423-055A	SHAFT	M/D (TCH-55)	
			447-014B	CUSHION	SPONGE KNOB,FUNCT-B	
			447-060A	CUSHION	KNOB,PRE-SET(TCH-55)	
			447-061A	CUSHION	KNOB,FUNCTION (TCH-55)	
			464-055A	REFLECTOR	L.C.D (TCH-55,CAR-CD)	
			464-056A	REFLECTOR	MAIN (TCH-55,CAR-CD)	
			472-055A	FELT	SLOT (TCH-55)	
			472-700U	FELT		

「REPLACEMENT PARTS LIST」

MODEL : TCH-55 BR9 SET PART NO : 112-055I RUN-DATE : 92.08.18

S	AL	LOCA.NO	PART NO(GS)	DESCRIPTION	SPECIFICATION	REMARKS
			4810S-0055A	BRACKET	SLOT (TCH-55)	
			4810S-0056A	BRACKET	SHIEL,PLATE (TCH-55)	
			4940S-0055A	KNOB	EJECT (TCH-55,CAR-CD)	
			4940S-0056A	KNOB	PRE-SET (TCH-55,CAR-CD)	
			4940S-0056B	KNOB	PRE-SET #2#	
			4940S-0056C	KNOB	PRE-SET #3#	
			4940S-0056D	KNOB	PRE-SET #4#	
			4940S-0056E	KNOB	PRE-SET #5#	
			4940S-0056F	KNOB	PRE-SET #6#	
			4940S-0057A	KNOB	FUNCTION-S (TCH-55,CAR-CD)	
			4940S-0057B	KNOB	FUNCTION #STBY#	
			4940S-0057C	KNOB	FUNCTION #PLAY/PAUSE#MARK	
			4940S-0058A	KNOB	FUNCTION-L (TCH-55,CAR-CD)	
			4940S-0058B	KNOB	FUNCT-B#SEARCH/MANUAL UP#MARK	
			4940S-0058C	KNOB	FUNCT-B#SKIP/SEEK DOWN#MARK	
			4940S-0058D	KNOB	FUNCT-B#SKIP/SEEK UP#MARK	
			4940S-0058E	KNOB	FUNCT-B#PS/AS#	
			4940S-0058F	KNOB	FUNCT-B#BAND#	
			4940S-0058G	KNOB	FUNCT-B#LOUD#	
			4940S-0058J	KNOB	FUNCTION-B(ST/MO)	
			563-001V	CONNECTOR ASSY	RUBBER 69.1X11.2X2 YPS-TY	
			659-143F	DISPLAY	80035 SN/CO TAESUK TCH-55	
			6871S-13CAD	PWB ASSY	TCH-55 BG3 TREB/BASS	
			6871S-13LAD	PWB ASSY	TCH-55 BG3 MAIN FROT	
			6871S-15XAB	PWB ASSY	CAR TUNER MODULE (2BANND)	
			6871SA13LAD	PWB ASSY	TCH-55 BG3 MAIN	
			6871SB13LAD	PWB ASSY	TCH-55 BG3 FRONT	
			88W-0013	CD MECHA PARTS	DISC STOPPER M-X060	
			88W-0034	CD MECHA PARTS	FEEL GEAR(A)CON. A-0065	
			88W-0035	CD MECHA PARTS	LOADING GEAR(A) M-0232	
			88W-0036	CD MECHA PARTS	LOADING GEAR(B) M-0233	
			88W-0049	CD MECHA PARTS	FEED GEAR(B) M-0249	
			88W-0053	CD MECHA PARTS	LOADING MOTOR ASSY K-0256	
			88W-0054	CD MECHA PARTS	FEED MOTOR ASSY K-0257	
		CF101	616-010B	FILTER CERAMIC	SFE10.7MS3GH(RD) 180K (S)	
		CF102	616-010J	FILTER CERAMIC	SFE10.7MJA10-A,MURATA	
		CF104	616-020C	FILTER CERAMIC	RESONATOR CSB456F11 18.95K (S)	
		CF201	616-028B	FILTER CERAMIC	AHCFM2-A450AL	
		CF401	616-011G	FILTER CERAMIC	FILTER,B P BPMB8(88-108MHZ)(S)	
		CN400	561-730C	CONNECTOR	WAFWE QRB FEMALE NEW DAIHEE	
		CN401	563-806A	CONNECTOR ASSY	GS IL-T06X2 1571#28 160	
		CN600	561-686K	CONNECTOR	WAFER,FPC ELCO 8370-111 11PST	
		CN601	561-687P	CONNECTOR	WAFER,FPC ELCO 8370-167 16PAN	
		CN801	561-908F	CONNECTOR	B TO B 52257-0610 J-MOLEX	
		C101	0CH4100K116	CAPA,CHIP CERAMIC M/L T.C F/S	10PF 50V D NPO 2012 R/TP	
		C102	0CH4050K116	CAPA,CHIP CERAMIC M/L T.C F/S	5PF 50V D NPO 2012 R/TP	
		C103	0CH4100K116	CAPA,CHIP CERAMIC M/L T.C F/S	10PF 50V D NPO 2012 R/TP	
		C104	0CH1223K946	CHIP CAPA CERAMIC M/L H.D F/S	0.022U 50V Z F 2.0X1.25 R/TP	
		C105	0CH1224K946	CAPA,CHIP CERAMIC M/L H.D F/S		
		C106	0CH1223K946	CHIP CAPA CERAMIC M/L H.D F/S	0.022U 50V Z F 2.0X1.25 R/TP	

[REPLACEMENT PARTS LIST]

MODEL : TCH-55 BR9 SET PART NO : 112-055I RUN-DATE : 92.08.18

S	AL	LOCA.NO	PART NO(GS)	DESCRIPTION	SPECIFICATION	REMARKS
		C107	0CH1102K466	CHIP CAPA CERAMIC M/L H.D F/S	1000P 50V J X7R 2.0X1.25 R/TP	
		C108	0CH4030K016	CHIP CAPA CERAMIC M/L T.C F/S	3P 50V C NPO 2.0X1.25R/TP	
		C109	0CH4100K116	CAPA,CHIP CERAMIC M/L T.C F/S	10PF 50V D NPO 2012 R/TP	
		C110	0CH4050K116	CAPA,CHIP CERAMIC M/L T.C F/S	5PF 50V D NPO 2012 R/TP	
		C111	0CE1063F619	CAPACITOR,ELECTROLYTIC	10M SRE 16V M FL TP(2.5)	
		C112	0CH1473K946	CAPA,CHIP CERAMIC M/L H.D F/S	0.047UF 50V Z Y5V(F) 2012 R/TP	
		C113	0CE1063F619	CAPACITOR,ELECTROLYTIC	10M SRE 16V M FL TP(2.5)	
		C114	0CH1223K946	CHIP CAPA CERAMIC M/L H.D F/S	0.022U 50V Z F 2.0X1.25 R/TP	
		C115	0CH1473K946	CAPA,CHIP CERAMIC M/L H.D F/S	0.047UF 50V Z Y5V(F) 2012 R/TP	
		C116	0CH1473K946	CAPA,CHIP CERAMIC M/L H.D F/S	0.047UF 50V Z Y5V(F) 2012 R/TP	
		C117	0CH1223K946	CHIP CAPA CERAMIC M/L H.D F/S	0.022U 50V Z F 2.0X1.25 R/TP	
		C118	0CH4150K416	CAPA,CHIP CERAMIC M/L T.C F/S	15P 50V J 2.0*1.2 R/TP	
		C119	0CH4100K116	CAPA,CHIP CERAMIC M/L T.C F/S	10PF 50V D NPO 2012 R/TP	
		C120	0CH4150K416	CAPA,CHIP CERAMIC M/L T.C F/S	15P 50V J 2.0*1.2 R/TP	
		C121	0CH4330K416	CAPA,CHIP CERAMIC M/L T.C F/S	33P 50V J 2.0*1.25 R/TP	
		C122	0CH4180K416	CHIP CAPA CERAMIC M/L T.C F/S	18P 50V J C 2.0X1.2 R/TP	
		C123	0CH1223K946	CHIP CAPA CERAMIC M/L H.D F/S	0.022U 50V Z F 2.0X1.25 R/TP	
		C124	0CH4101K416	CHIP CAPA CERAMIC M/L T.C F/S	100P 50V NPO 2.0X1.25 R/TP	
		C125	0CH1103K566	CHIP CAPA CERAMIC M/L H.D F/S	0.01M 50V K X 2.0X1.25 R/TP	
		C126	0CE2263D619	CAPACITOR,ELECTROLYTIC	22M SRE 10V M FL TP(2.5)	
		C127	0CH1223K946	CHIP CAPA CERAMIC M/L H.D F/S	0.022U 50V Z F 2.0X1.25 R/TP	
		C128	0CH1473K946	CAPA,CHIP CERAMIC M/L H.D F/S	0.047UF 50V Z Y5V(F) 2012 R/TP	
		C129	0CE1073D619	CAPACITOR,ELECTROLYTIC	100M SRE 10V M FL TP2.5	
		C130	0CH1223K946	CHIP CAPA CERAMIC M/L H.D F/S	0.022U 50V Z F 2.0X1.25 R/TP	
		C131	0CE4753F619	CAPACITOR,ELECTROLYTIC	4.7M SRE 16V M FL TP(2.5)	
		C132	0CE1053K619	CAPACITOR,ELECTROLYTIC	1.0M SRE 50V M FL TP(2.5)	
		C133	0CE4743K619	CAPACITOR,ELECTROLYTIC	0.47M SRE 50U M FL TP(2.5)	
		C134	0CH1102K466	CHIP CAPA CERAMIC M/L H.D F/S	1000P 50V J X7R 2.0X1.25 R/TP	
		C135	0CH1472K566	CHIP CAPA CERAMIC M/L H.D F/S	0.0047M 50V K X 2.0X1.25 R/TP	
		C136	0CH1102K466	CHIP CAPA CERAMIC M/L H.D F/S	1000P 50V J X7R 2.0X1.25 R/TP	
		C137	0CE4743K619	CAPACITOR,ELECTROLYTIC	0.47M SRE 50U M FL TP(2.5)	
		C138	0CE4743K619	CAPACITOR,ELECTROLYTIC	0.47M SRE 50U M FL TP(2.5)	
		C139	0CE2243K619	CAPACITOR,ELECTROLYTIC	0.22M SRE 50V M FL TP(2.5)	
		C140	0CE2253J619	CAPACITOR,ELECTROLYTIC	2.2M SRE 35V M FL TP(2.5)	
		C141	0CE1053K619	CAPACITOR,ELECTROLYTIC	1.0M SRE 50V M FL TP(2.5)	
		C142	0CE1053K619	CAPACITOR,ELECTROLYTIC	1.0M SRE 50V M FL TP(2.5)	
		C143	0CH1153K566	CAPA,CHIP CERAMIC M/L H.D F/S	0.0150UF 50V K X7R(X) 2012 R/T	
		C144	0CH1682K566	CHIP CAPA CERAMIC M/L H.D F/S		
		C145	0CH1223K946	CHIP CAPA CERAMIC M/L H.D F/S	0.022U 50V Z F 2.0X1.25 R/TP	
		C146	0CE1073D619	CAPACITOR,ELECTROLYTIC	100M SRE 10V M FL TP2.5	
		C147	0CH1222K466	CHIP CAPA CERAMIC M/L H.D F/S	2200P 50V J X 2.0X1.25 R/TP	
		C148	0CH1682K566	CHIP CAPA CERAMIC M/L H.D F/S		
		C149	0CH1223K946	CHIP CAPA CERAMIC M/L H.D F/S	0.022U 50V Z F 2.0X1.25 R/TP	
		C150	0CH1103K566	CHIP CAPA CERAMIC M/L H.D F/S	0.01M 50V K X 2.0X1.25 R/TP	
		C151	0CH1223K946	CHIP CAPA CERAMIC M/L H.D F/S	0.022U 50V Z F 2.0X1.25 R/TP	
		C152	0CH1223K946	CHIP CAPA CERAMIC M/L H.D F/S	0.022U 50V Z F 2.0X1.25 R/TP	
		C153	0CH4080K116	CHIP CAPA CERAMIC M/L T.C F/S	8P 50V D NPO 2.0X1.25 R/TP	
		C154	0CH1103K566	CHIP CAPA CERAMIC M/L H.D F/S	0.01M 50V K X 2.0X1.25 R/TP	
		C155	0CH1223K946	CHIP CAPA CERAMIC M/L H.D F/S	0.022U 50V Z F 2.0X1.25 R/TP	
		C201	0CH1332K566	CAPA,CHIP CERAMIC M/L H.D F/S	3300PF 50V K X7R(X) 2012 R/TP	

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S	AL	LOCA.NO	PART NO(GS)	DESCRIPTION	SPECIFICATION	REMARKS
		C202	0CH4101K416	CHIP CAPA CERAMIC M/L T.C F/S	100P 50V NPO 2.0X1.25 R/TP	
		C203	0CH1223K946	CHIP CAPA CERAMIC M/L H.D F/S	0.022U 50V Z F 2.0X1.25 R/TP	
		C204	0CH1223K946	CHIP CAPA CERAMIC M/L H.D F/S	0.022U 50V Z F 2.0X1.25 R/TP	
		C205	0CH1223K946	CHIP CAPA CERAMIC M/L H.D F/S	0.022U 50V Z F 2.0X1.25 R/TP	
		C206	0CH4080K116	CHIP CAPA CERAMIC M/L T.C F/S	8P 50V D NPO 2.0X1.25 R/TP	
		C207	0CH1224K946	CAPA,CHIP CERAMIC M/L H.D F/S		
		C209	0CH1103K566	CHIP CAPA CERAMIC M/L H.D F/S	0.01M 50V K X 2.0X1.25 R/TP	
		C210	0CH4471K416	CAPA,CHIP CERAMIC M/L T.C F/S	470PF 50V J NPO 2.0X1.25	
		C211	0CH4180K416	CHIP CAPA CERAMIC M/L T.C F/S	18P 50V J C 2.0X1.2 R/TP	
		C212	0CH1223K946	CHIP CAPA CERAMIC M/L H.D F/S	0.022U 50V Z F 2.0X1.25 R/TP	
		C213	0CH1104K946	CHIP CAPA CERAMIC M/L H.D F/S	0.1U 50V Z F 2.0X1.2 R/TP	
		C214	0CE3353H619	CAPACITOR,ELECTROLYTIC	3.3M SRE 25V M FL TP(2.5)	
		C215	0CH1223K946	CHIP CAPA CERAMIC M/L H.D F/S	0.022U 50V Z F 2.0X1.25 R/TP	
		C216	0CH1223K946	CHIP CAPA CERAMIC M/L H.D F/S	0.022U 50V Z F 2.0X1.25 R/TP	
		C217	0CE4763F619	CAPACITOR,ELECTROLYTIC	47M SRE 16V M FL TP(2.5)	
		C400	0CE1063F619	CAPACITOR,ELECTROLYTIC	10M SRE 16V M FL TP(2.5)	
		C401	0CE2253J619	CAPACITOR,ELECTROLYTIC	2.2M SRE 35V M FL TP(2.5)	
		C402	0CE2253J619	CAPACITOR,ELECTROLYTIC	2.2M SRE 35V M FL TP(2.5)	
		C403	0CH1104K946	CHIP CAPA CERAMIC M/L H.D F/S	0.1U 50V Z F 2.0X1.2 R/TP	
		C405	0CN2230H948	CAPACITOR,TUBULAR(HIGH DIELEC)	0.022UF 25V Z F TA26	
		C406	0CH1223K946	CHIP CAPA CERAMIC M/L H.D F/S	0.022U 50V Z F 2.0X1.25 R/TP	
		C407	0CX1500K408	CAPACITOR TUBULA(T.C)	15P 50V J SL TA26	
		C408	0CX1500K408	CAPACITOR TUBULA(T.C)	15P 50V J SL TA26	
		C409	0CE4753F619	CAPACITOR,ELECTROLYTIC	4.7M SRE 16V M FL TP(2.5)	
		C410	0CH1222K466	CHIP CAPA CERAMIC M/L H.D F/S	2200P 50V J X 2.0X1.25 R/TP	
		C411	0CE1073D619	CAPACITOR,ELECTROLYTIC	100M SRE 10V M FL TP2.5	
		C412	0CH1223K946	CHIP CAPA CERAMIC M/L H.D F/S	0.022U 50V Z F 2.0X1.25 R/TP	
		C413	0CE1073D619	CAPACITOR,ELECTROLYTIC	100M SRE 10V M FL TP2.5	
		C414	0CX4700K408	CAPACITOR TUBULA(T.C)	47P 50V J SL TA26	
		C415	0CH4030K016	CHIP CAPA CERAMIC M/L T.C F/S	3P 50V C NPO 2.0X1.25R/TP	
		C416	0CE1073D619	CAPACITOR,ELECTROLYTIC	100M SRE 10V M FL TP2.5	
		C419	0CE4763F619	CAPACITOR,ELECTROLYTIC	47M SRE 16V M FL TP(2.5)	
		C420	0CE1086D630	CAPACITOR,ELECTROLYTIC	1000M SMS 10V M FM5	
		C421	0CE4763F619	CAPACITOR,ELECTROLYTIC	47M SRE 16V M FL TP(2.5)	
		C422	0CE4763F619	CAPACITOR,ELECTROLYTIC	47M SRE 16V M FL TP(2.5)	
		C423	0CK2230K945	CAPACITOR CERAMIC(HIGH DIELE)	0.022M 50V Z F TS	
		C424	0CE4763F619	CAPACITOR,ELECTROLYTIC	47M SRE 16V M FL TP(2.5)	
		C425	624-201C	CAPACITOR ELECTROLYTIC DOIB	ER-1320-2200-16-M	
		C426	0CE1073D619	CAPACITOR,ELECTROLYTIC	100M SRE 10V M FL TP2.5	
		C427	0CH4560K416	CHIP CAPA CERAMIC M/L T.C F/S	56P 50V J NPO 2.0X1.25 R/TP	
		C428	0CH4330K416	CAPA,CHIP CERAMIC M/L T.C F/S	33P 50V J 2.0*1.25 R/TP	
		C429	0CE1073D619	CAPACITOR,ELECTROLYTIC	100M SRE 10V M FL TP2.5	
		C430	0CE3363D619	CAPACITOR,ELECTROLYTIC	33M SRE 10V M FL TP2.5	
		C431	624-034D	CAPACITOR ELECTROLYTIC DOIB	GOLD,EECF5R5U104 0.1F/5.5V	
		C432	0CE4763F619	CAPACITOR,ELECTROLYTIC	47M SRE 16V M FL TP(2.5)	
		C433	0CH1223K946	CHIP CAPA CERAMIC M/L H.D F/S	0.022U 50V Z F 2.0X1.25 R/TP	
		C434	0CE1073D619	CAPACITOR,ELECTROLYTIC	100M SRE 10V M FL TP2.5	
		C435	0CH4471K516	CHIP CAPA CERAMIC M/L T.C F/S	470P 50V 10 NPO 2.0*1.25 R/TP	
		C436	0CH4330K416	CAPA,CHIP CERAMIC M/L T.C F/S	33P 50V J 2.0*1.25 R/TP	
		C437	0CH4330K416	CAPA,CHIP CERAMIC M/L T.C F/S	33P 50V J 2.0*1.25 R/TP	

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S	AL	LOCA.NO	PART NO(GS)	DESCRIPTION	SPECIFICATION	REMARKS
		C438	0CE2263D619	CAPACITOR,ELECTROLYTIC	22M SRE 10V M FL TP(2.5)	
		C439	0CN2230F948	CAPACITOR TUBULA(HIGH DIELE)	0.022M 16V Z F TA26	
		C440	0CE1063F619	CAPACITOR,ELECTROLYTIC	10M SRE 16V M FL TP(2.5)	
		C460	0CH1222K466	CHIP CAPA CERAMIC M/L H.D F/S	2200P 50V J X 2.0X1.25 R/TP	
		C600	0CE3363D619	CAPACITOR,ELECTROLYTIC	33M SRE 10V M FL TP2.5	
		C601	0CH1103K566	CHIP CAPA CERAMIC M/L H.D F/S	0.01M 50V K X 2.0X1.25 R/TP	
		C602	0CN1030F678	CAPACITOR TUBULA(HIGH DIELE)	0.01M 16V M Y TA26	
		C603	0CE1073D619	CAPACITOR,ELECTROLYTIC	100M SRE 10V M FL TP2.5	
		C604	0CE4763F619	CAPACITOR,ELECTROLYTIC	47M SRE 16V M FL TP(2.5)	
		C605	0CH1104K946	CHIP CAPA CERAMIC M/L H.D F/S	0.1U 50V Z F 2.0X1.2 R/TP	
		C606	0CH1333K566	CAPA,CHIP CERAMIC M/L H.D F/S	0.0330UF 50V K X7R(X) 2012 R/T	
		C607	0CH1222K466	CHIP CAPA CERAMIC M/L H.D F/S	2200P 50V J X 2.0X1.25 R/TP	
		C608	0CH1103K566	CHIP CAPA CERAMIC M/L H.D F/S	0.01M 50V K X 2.0X1.25 R/TP	
		C609	0CE1073D619	CAPACITOR,ELECTROLYTIC	100M SRE 10V M FL TP2.5	
		C610	0CH1104K946	CHIP CAPA CERAMIC M/L H.D F/S	0.1U 50V Z F 2.0X1.2 R/TP	
		C611	0CH1104K946	CHIP CAPA CERAMIC M/L H.D F/S	0.1U 50V Z F 2.0X1.2 R/TP	
		C612	0CN1010K518	CAPACITOR TUBULA(HIGH DIELE)	100P 50V K B TA26	
		C613	0CH1104K946	CHIP CAPA CERAMIC M/L H.D F/S	0.1U 50V Z F 2.0X1.2 R/TP	
		C614	0CE4753F619	CAPACITOR,ELECTROLYTIC	4.7M SRE 16V M FL TP(2.5)	
		C615	0CH1104K946	CHIP CAPA CERAMIC M/L H.D F/S	0.1U 50V Z F 2.0X1.2 R/TP	
		C616	0CK1040K945	CAPACITOR,CERAMIC(HIGH DIELEC)	0.1UF 50V Z F TS	
		C617	0CX6800K408	CAPACITOR TUBULA(T.C)	68P 50V J SL TA26	
		C618	0CH1683K946	CHIP CAPA CERAMIC M/L H.D F/S	0.068U 50V Z F 2.0X1.2 R/TP	
		C619	0CE1063F619	CAPACITOR,ELECTROLYTIC	10M SRE 16V M FL TP(2.5)	
		C620	0CN1010K518	CAPACITOR TUBULA(HIGH DIELE)	100P 50V K B TA26	
		C621	0CH1103K566	CHIP CAPA CERAMIC M/L H.D F/S	0.01M 50V K X 2.0X1.25 R/TP	
		C622	0CE2263D619	CAPACITOR,ELECTROLYTIC	22M SRE 10V M FL TP(2.5)	
		C623	0CE4763F619	CAPACITOR,ELECTROLYTIC	47M SRE 16V M FL TP(2.5)	
		C624	0CE1053K619	CAPACITOR,ELECTROLYTIC	1.0M SRE 50V M FL TP(2.5)	
		C625	0CE1053K619	CAPACITOR,ELECTROLYTIC	1.0M SRE 50V M FL TP(2.5)	
		C626	0CH1472K566	CHIP CAPA CERAMIC M/L H.D F/S	0.0047M 50V K X 2.0X1.25 R/TP	
		C627	0CE1073D619	CAPACITOR,ELECTROLYTIC	100M SRE 10V M FL TP2.5	
		C628	0CN1020K518	CAPACITOR TUBULA(HIGH DIELE)	1000P 50V K B TA26	
		C629	0CH1333K566	CAPA,CHIP CERAMIC M/L H.D F/S	0.0330UF 50V K X7R(X) 2012 R/T	
		C630	0CN1020K518	CAPACITOR TUBULA(HIGH DIELE)	1000P 50V K B TA26	
		C633	0CN1020K518	CAPACITOR TUBULA(HIGH DIELE)	1000P 50V K B TA26	
		C634	0CH1473H566	CAPA,CHIP CERAMIC M/L H.D F/S	0.0470UF 25V K X7R(X) 2012 R/T	
		C635	0CH1223K946	CHIP CAPA CERAMIC M/L H.D F/S	0.022U 50V Z F 2.0X1.25 R/TP	
		C636	0CH1104K946	CHIP CAPA CERAMIC M/L H.D F/S	0.1U 50V Z F 2.0X1.2 R/TP	
		C637	0CE4743K619	CAPACITOR,ELECTROLYTIC	0.47M SRE 50U M FL TP(2.5)	
		C640	0CE4743K619	CAPACITOR,ELECTROLYTIC	0.47M SRE 50U M FL TP(2.5)	
		C641	0CE4743K619	CAPACITOR,ELECTROLYTIC	0.47M SRE 50U M FL TP(2.5)	
		C642	0CN1510K518	CAPACITOR TUBULA(HIGH DIELE)	150P 50V K B TA26	
		C643	0CN2230H948	CAPACITOR,TUBULAR(HIGH DIELEC)	0.022UF 25V Z F TA26	
		C645	0CE1073D619	CAPACITOR,ELECTROLYTIC	100M SRE 10V M FL TP2.5	
		C646	0CK2230K945	CAPACITOR CERAMIC(HIGH DIELE)	0.022M 50V Z F TS	
		C655	0CE1073D619	CAPACITOR,ELECTROLYTIC	100M SRE 10V M FL TP2.5	
		C700	0CE4743K619	CAPACITOR,ELECTROLYTIC	0.47M SRE 50U M FL TP(2.5)	
		C701	0CN1030F678	CAPACITOR TUBULA(HIGH DIELE)	0.01M 16V M Y TA26	
		C702	0CH1104K946	CHIP CAPA CERAMIC M/L H.D F/S	0.1U 50V Z F 2.0X1.2 R/TP	

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S	AL	LOCA.NO	PART NO(GS)	DESCRIPTION	SPECIFICATION	REMARKS
		C703	0CE1073D619	CAPACITOR,ELECTROLYTIC	100M SRE 10V M FL TP2.5	
		C704	0CE1073D619	CAPACITOR,ELECTROLYTIC	100M SRE 10V M FL TP2.5	
		C705	0CE4753F619	CAPACITOR,ELECTROLYTIC	4.7M SRE 16V M FL TP(2.5)	
		C706	0CE4763F619	CAPACITOR,ELECTROLYTIC	47M SRE 16V M FL TP(2.5)	
		C707	0CH1103K566	CHIP CAPA CERAMIC M/L H.D F/S	0.01M 50V K X 2.0X1.25 R/TP	
		C708	0CH4330K416	CAPA,CHIP CERAMIC M/L T.C F/S	33P 50V J 2.0*1.25 R/TP	
		C709	0CH4330K416	CAPA,CHIP CERAMIC M/L T.C F/S	33P 50V J 2.0*1.25 R/TP	
		C710	0CN2230H948	CAPACITOR,TUBULAR(HIGH DIELEC)	0.022UF 25V Z F TA26	
		C711	0CN2230H948	CAPACITOR,TUBULAR(HIGH DIELEC)	0.022UF 25V Z F TA26	
		C712	0CK1040K945	CAPACITOR,CERAMIC(HIGH DIELEC)	0.1UF 50V Z F TS	
		C713	0CH1104K946	CHIP CAPA CERAMIC M/L H.D F/S	0.1U 50V Z F 2.0X1.2 R/TP	
		C714	0CK1040K945	CAPACITOR,CERAMIC(HIGH DIELEC)	0.1UF 50V Z F TS	
		C800	0CE3343K619	CAPACITOR,ELECTROLYTIC	0.33M SRE 50V M FL TP(2.5)	
		C801	0CE4776D618	CAPACITOR,ELECTROLYTIC	470M SMS 10V M FL TP(5)	
		C801	0CQ2721N409	CAPACITOR POLYESTER(MYLAR)	0.0027M 100V J POLY TP	
		C802	0CQ3331N409	CAPACITOR POLYESTER(MYLAR)	0.033U 100V J POLY TP	
		C803	0CQ6821N409	CAPACITOR POLYESTER(MYLAR)	0.0068U 100V J POLY TP	
		C804	0CE1043K619	CAPACITOR,ELECTROLYTIC	0.1M SRE 50V M FL TP(2.5)	
		C805	0CE4753F619	CAPACITOR,ELECTROLYTIC	4.7M SRE 16V M FL TP(2.5)	
		C805	0CK1040K945	CAPACITOR,CERAMIC(HIGH DIELEC)	0.1UF 50V Z F TS	
		C806	0CE3343K619	CAPACITOR,ELECTROLYTIC	0.33M SRE 50V M FL TP(2.5)	
		C806	0CK1040K945	CAPACITOR,CERAMIC(HIGH DIELEC)	0.1UF 50V Z F TS	
		C807	0CK1040K945	CAPACITOR,CERAMIC(HIGH DIELEC)	0.1UF 50V Z F TS	
		C807	0CN1020K518	CAPACITOR TUBULA(HIGH DIELE)	1000P 50V K B TA26	
		C808	0CE4753F619	CAPACITOR,ELECTROLYTIC	4.7M SRE 16V M FL TP(2.5)	
		C809	0CE2243K619	CAPACITOR,ELECTROLYTIC	0.22M SRE 50V M FL TP(2.5)	
		C810	0CE1063F619	CAPACITOR,ELECTROLYTIC	10M SRE 16V M FL TP(2.5)	
		C811	0CE1063F619	CAPACITOR,ELECTROLYTIC	10M SRE 16V M FL TP(2.5)	
		C811	0CE1073D619	CAPACITOR,ELECTROLYTIC	100M SRE 10V M FL TP2.5	
		C813	0CE1063F619	CAPACITOR,ELECTROLYTIC	10M SRE 16V M FL TP(2.5)	
		C814	0CE1053K619	CAPACITOR,ELECTROLYTIC	1.0M SRE 50V M FL TP(2.5)	
		C815	0CQ1021N449	CAPACITOR POLYESTER(MYLAR)	1000P 100V J PYLN TP	
		C816	0CE2263D619	CAPACITOR,ELECTROLYTIC	22M SRE 10V M FL TP(2.5)	
		C817	0CQ1242N409	CAPACITOR POLYESTER(MYLAR)	0.12UU S 100V J POLY TP	
		C818	0CQ1242N409	CAPACITOR POLYESTER(MYLAR)	0.12UU S 100V J POLY TP	
		C819	0CE1063F619	CAPACITOR,ELECTROLYTIC	10M SRE 16V M FL TP(2.5)	
		C820	0CE2263D619	CAPACITOR,ELECTROLYTIC	22M SRE 10V M FL TP(2.5)	
		C821	0CE1073D619	CAPACITOR,ELECTROLYTIC	100M SRE 10V M FL TP2.5	
		C822	0CE3363D619	CAPACITOR,ELECTROLYTIC	33M SRE 10V M FL TP2.5	
		C830	0CE4753F619	CAPACITOR,ELECTROLYTIC	4.7M SRE 16V M FL TP(2.5)	
		C831	0CE4753F619	CAPACITOR,ELECTROLYTIC	4.7M SRE 16V M FL TP(2.5)	
		C832	0CE4753F619	CAPACITOR,ELECTROLYTIC	4.7M SRE 16V M FL TP(2.5)	
		C850	0CE3343K619	CAPACITOR,ELECTROLYTIC	0.33M SRE 50V M FL TP(2.5)	
		C851	0CQ2721N409	CAPACITOR POLYESTER(MYLAR)	0.0027M 100V J POLY TP	
		C852	0CQ3331N409	CAPACITOR POLYESTER(MYLAR)	0.033U 100V J POLY TP	
		C853	0CQ6821N409	CAPACITOR POLYESTER(MYLAR)	0.0068U 100V J POLY TP	
		C854	0CE1043K619	CAPACITOR,ELECTROLYTIC	0.1M SRE 50V M FL TP(2.5)	
		C855	0CE4753F619	CAPACITOR,ELECTROLYTIC	4.7M SRE 16V M FL TP(2.5)	
		C856	0CE3343K619	CAPACITOR,ELECTROLYTIC	0.33M SRE 50V M FL TP(2.5)	
		C857	0CN1020K518	CAPACITOR TUBULA(HIGH DIELE)	1000P 50V K B TA26	

S	AL	LOCA.NO	PART NO(GS)	DESCRIPTION	SPECIFICATION	REMARKS
		C858	0CE4753F619	CAPACITOR,ELECTROLYTIC	4.7M SRE 16V M FL TP(2.5)	
		C859	0CE2243K619	CAPACITOR,ELECTROLYTIC	0.22M SRE 50V M FL TP(2.5)	
		C862	0CE2263D619	CAPACITOR,ELECTROLYTIC	22M SRE 10V M FL TP(2.5)	
		C863	0CE1063F619	CAPACITOR,ELECTROLYTIC	10M SRE 16V M FL TP(2.5)	
		C864	0CE1053K619	CAPACITOR,ELECTROLYTIC	1.0M SRE 50V M FL TP(2.5)	
		C865	0CQ1021N449	CAPACITOR POLYESTER(MYLAR)	1000P 100V J PYLN TP	
		C866	0CE2263D619	CAPACITOR,ELECTROLYTIC	22M SRE 10V M FL TP(2.5)	
		C867	0CQ1242N409	CAPACITOR POLYESTER(MYLAR)	0.12UU S 100V J POLY TP	
		C868	0CQ1242N409	CAPACITOR POLYESTER(MYLAR)	0.12UU S 100V J POLY TP	
		C869	0CE1063F619	CAPACITOR,ELECTROLYTIC	10M SRE 16V M FL TP(2.5)	
		C880	0CE4753F619	CAPACITOR,ELECTROLYTIC	4.7M SRE 16V M FL TP(2.5)	
		C881	0CE4753F619	CAPACITOR,ELECTROLYTIC	4.7M SRE 16V M FL TP(2.5)	
		C882	0CE4753F619	CAPACITOR,ELECTROLYTIC	4.7M SRE 16V M FL TP(2.5)	
		D	0DD132009AA	DIODE	1SS132 DETECT,SW TP	
		D101	0DD172009AA	DIODE	1SV172,VVC,TAPING,TOSHIBA	
		D102	0DD184009AC	DIODE	KDS184-SOT-23,SW,KEC	
		D103	0DD184009AC	DIODE	KDS184-SOT-23,SW,KEC	
		D201	0DD184009AC	DIODE	KDS184-SOT-23,SW,KEC	
		D202	0DD172009AA	DIODE	1SV172,VVC,TAPING,TOSHIBA	
		D203	0DD184009AC	DIODE	KDS184-SOT-23,SW,KEC	
		D400	0DD400109BA	DIODE	SI RECT 50V 1A,1N4001	
		D401	0DD132009AA	DIODE	1SS132 DETECT,SW TP	
		D403	0DD132009AA	DIODE	1SS132 DETECT,SW TP	
		D404	0DD132009AA	DIODE	1SS132 DETECT,SW TP	
		D406	0DD132009AA	DIODE	1SS132 DETECT,SW TP	
		D407	0DD132009AA	DIODE	1SS132 DETECT,SW TP	
		D410	0DD132009AA	DIODE	1SS132 DETECT,SW TP	
		D411	0DD132009AA	DIODE	1SS132 DETECT,SW TP	
		D412	0DD132009AA	DIODE	1SS132 DETECT,SW TP	
		D413	0DD132009AA	DIODE	1SS132 DETECT,SW TP	
		D414	0DD132009AA	DIODE	1SS132 DETECT,SW TP	
		D415	0DD132009AA	DIODE	1SS132 DETECT,SW TP	
		D416	0DD132009AA	DIODE	1SS132 DETECT,SW TP	
		D417	0DD132009AA	DIODE	1SS132 DETECT,SW TP	
		D418	0DD132009AA	DIODE	1SS132 DETECT,SW TP	
		D419	0DD132009AA	DIODE	1SS132 DETECT,SW TP	
		D420	0DD132009AA	DIODE	1SS132 DETECT,SW TP	
		D421	0DD132009AA	DIODE	1SS132 DETECT,SW TP	
		D422	0DD132009AA	DIODE	1SS132 DETECT,SW TP	
		D425	0DD132009AA	DIODE	1SS132 DETECT,SW TP	
		D430	0DD132009AA	DIODE	1SS132 DETECT,SW TP	
		D702	0DD132009AA	DIODE	1SS132 DETECT,SW TP	
		IC101	0ISA188300A	IC,SANYO	LA1883M 1CHIP TUNER SYS,SANYO	
		IC400	0INE755160A	IC,NEC	UPD75516GF-387-3B9 MICOM,NEC	
		IC401	0ISA758200A	IC,SANYO	LC7582-QIP64A LCD DRIVE,SANY	
		IC402	0ISA721800A	IC,SANYO	LC7218 PLL,SANYO	
		IC404	0IRH405200A	IC,ROHM	BU4052BP-T1 4CH A/MULT,ROHM/J	
		IC405	0IGS780800A	IC, GOLDSTAR ELECTRON	GL 7808	
		IC600	0ISS920100A	IC,SAMSUNG SEMICONDUCTOR	KA9201D-TP RF AMP,S/S	
		IC601	0ISS830900A	IC,SAMSUNG SEMICONDUCTOR	KA48309-48QFP SERVO,S/S	

MODEL : TCH-55 BR9 SET PART NO : 112-055I RUN-DATE : 92.08.18

S	AL	LOCA.NO	PART NO(GS)	DESCRIPTION	SPECIFICATION	REMARKS
		IC602	0ISA653600A	IC,SANYO	LA6536M-MFP-30S-LF(TE2416)DRI	
		IC603	0IRH621800A	IC, ROHM	BA6218 MOTOR DRIVE ROHM (S)	
		IC700	0ISS599000A	IC, SAMSUNG SEMICONDUCTOR	KS5990 DSP(CDP),S/S	
		IC701	0ISA788300A	IC,SANYO	LC7883KM-MFP28(TE2416A)DAC	
		IC702	0IJR456000B	IC, JRC(JAPAN RADIO CORP.)	NJM4560M OP AMP JRC	
		IC703	0IJR456000B	IC, JRC(JAPAN RADIO CORP.)	NJM4560M OP AMP JRC	
		IC800	0IKE621000A	IC, KEC	KIA6210H PWR 22W*2 KEC	
		ZD603	0DZ390009BC	DIODE,ZENER	MTZ3.9B-T-77 ROHM-K	
		L101	635-009N	COIL RF FM	RF FM 5.5T	
		L102	0LA0332K018	INDUCTOR AXIAL LEAD	33M K 2.3X3.4 L5 TP	
		L103	635-009N	COIL RF FM	RF FM 5.5T	
		L104	635-009M	COIL RF FM	RF FM 4.5T	
		L400	0LA0221K018	INDUCTOR AXIAL LEAD	2.2UH K 2.3X3.4 L5 TP	
		L401	0LA0102K018	INDUCTOR AXIAL LEAD	10M K 2.3X3.4 L5 TP	
		L402	0LA0102K018	INDUCTOR AXIAL LEAD	10M K 2.3X3.4 L5 TP	
		L403	0LA0221K018	INDUCTOR AXIAL LEAD	2.2UH K 2.3X3.4 L5 TP	
		L601	0LA0102K018	INDUCTOR AXIAL LEAD	10M K 2.3X3.4 L5 TP	
		L602	0LA0102K018	INDUCTOR AXIAL LEAD	10M K 2.3X3.4 L5 TP	
		L701	0LA0102K018	INDUCTOR AXIAL LEAD	10M K 2.3X3.4 L5 TP	
		0J402	672-001A	WIREW SHIELD	TIN WIRE	
		0J920	672-001A	WIREW SHIELD	TIN WIRE	
		PL401	ASC0115G	LAMP	P,14V 40MA CAP(H-0R2),S/W	
		PL403	ASC0115G	LAMP	P,14V 40MA CAP(H-0R2),S/W	
		PL404	ASC0115G	LAMP	P,14V 40MA CAP(H-0R2),S/W	
		PL405	ASC0115G	LAMP	P,14V 40MA CAP(H-0R2),S/W	
		PL406	ASC0115G	LAMP	P,14V 40MA CAP(H-0R2),S/W	
		PL407	ASC0115G	LAMP	P,14V 40MA CAP(H-0R2),S/W	
		PL408	ASC0115G	LAMP	P,14V 40MA CAP(H-0R2),S/W	
		PL409	ASC0115G	LAMP	P,14V 40MA CAP(H-0R2),S/W	
		PN101	561-702F	CONNECTOR	WAFER GIL-GC-6P-S3L2-E-S0	
		PN102	561-702C	CONNECTOR	WAFER GIL-GC-3P-S3L2-E-S0	
		PN103	561-702C	CONNECTOR	WAFER GIL-GC-3P-S3L2-E-S0	
		PN104	561-702E	CONNECTOR	WAFER GIL-GC-5P-S3L2-E-S0	
		PN105	561-702E	CONNECTOR	WAFER GIL-GC-5P-S3L2-E-S0	
		PN400	563-953A	CONNECTOR ASSY	C,AY DAE HEE QRB 20P MALE (S)	
		PN801	561-907F	CONNECTOR	B TO B 53178-0610 J-MOLEX	
		Q101	0TF136000AA	FET	3SK 136 FET CHIP,HITACHI	
		Q102	0TR388009AD	TRANSISTOR	KTC3880S-Y-T1 TP,KEC	
		Q103	0TR222209IA	TRANSISTOR	KTN2222S-T1(ZB) NPN TP,KEC	
		Q201	0TR301009AA	TRANSISTOR	HN3G01J CHIP TR+FET,TOSHIBA	
		Q400	0TR126709AB	TRANSISTOR	KTA1267-Y MINI TP,KEC	
		Q401	0TR103009AE	TRANSISTOR	KRC103M TP,KEC(KRC1203)	
		Q402	0TR319909AA	TRANSISTOR	KTC3199-GR TP,KEC	
		Q403	0TR319909AA	TRANSISTOR	KTC3199-GR TP,KEC	
		Q405	0TR319909AA	TRANSISTOR	KTC3199-GR TP,KEC	
		Q406	0TR320509AB	TRANSISTOR	KTC3205-TP-Y (KTC2236A)KEC	
		Q407	0TR320209AA	TRANSISTOR	KTC3202-TP-Y (KTC1959)KEC	
		Q408	0TR319909AA	TRANSISTOR	KTC3199-GR TP,KEC	
		Q409	0TR127309AA	TRANSISTOR	KTA1273-TP-Y (KTA966A)KEC	
		Q410	0TR319909AA	TRANSISTOR	KTC3199-GR TP,KEC	

[REPLACEMENT PARTS LIST] P A G E : 9

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S	AL	LOCA.NO	PART NO(GS)	DESCRIPTION	SPECIFICATION	REMARKS
		Q414	0TR103009AE	TRANSISTOR	KRC103M TP,KEC(KRC1203)	
		Q600	0TR126709AB	TRANSISTOR	KTA1267-Y MINI TP,KEC	
		Q601	0TR103009AE	TRANSISTOR	KRC103M TP,KEC(KRC1203)	
		Q603	0TR320509AB	TRANSISTOR	KTC3205-TP-Y (KTC2236A)KEC	
		Q604	0TR320209AA	TRANSISTOR	KTC3202-TP-Y (KTC1959)KEC	
		Q605	0TR320209AA	TRANSISTOR	KTC3202-TP-Y (KTC1959)KEC	
		Q606	0TR103009AE	TRANSISTOR	KRC103M TP,KEC(KRC1203)	
		Q607	0TR103009AE	TRANSISTOR	KRC103M TP,KEC(KRC1203)	
		Q608	0TR126709AB	TRANSISTOR	KTA1267-Y MINI TP,KEC	
		Q800	0TR319909AA	TRANSISTOR	KTC3199-GR TP,KEC	
		Q801	0TR103009AE	TRANSISTOR	KRC103M TP,KEC(KRC1203)	
		Q802	0TR103009AE	TRANSISTOR	KRC103M TP,KEC(KRC1203)	
		Q803	0TR103009AE	TRANSISTOR	KRC103M TP,KEC(KRC1203)	
		Q804	0TR103009AE	TRANSISTOR	KRC103M TP,KEC(KRC1203)	
		Q805	0TR319909AA	TRANSISTOR	KTC3199-GR TP,KEC	
		Q806	0TR319909AA	TRANSISTOR	KTC3199-GR TP,KEC	
		Q807	0TR319909AA	TRANSISTOR	KTC3199-GR TP,KEC	
		Q809	0TR319909AA	TRANSISTOR	KTC3199-GR TP,KEC	
		Q850	0TR319909AA	TRANSISTOR	KTC3199-GR TP,KEC	
		Q851	0TR103009AE	TRANSISTOR	KRC103M TP,KEC(KRC1203)	
		Q852	0TR103009AE	TRANSISTOR	KRC103M TP,KEC(KRC1203)	
		Q855	0TR319909AA	TRANSISTOR	KTC3199-GR TP,KEC	
		Q856	0TR319909AA	TRANSISTOR	KTC3199-GR TP,KEC	
		Q857	0TR319909AA	TRANSISTOR	KTC3199-GR TP,KEC	
		Q859	0TR319909AA	TRANSISTOR	KTC3199-GR TP,KEC	
		Q901	0TR126709AB	TRANSISTOR	KTA1267-Y MINI TP,KEC	
		Q902	0TR103009AE	TRANSISTOR	KRC103M TP,KEC(KRC1203)	
		R101	0RH3302D622	RESISTOR CHIP	33K 1/10W 5 D.R/TP	
		R102	0RH3302D622	RESISTOR CHIP	33K 1/10W 5 D.R/TP	
		R103	0RH3302D622	RESISTOR CHIP	33K 1/10W 5 D.R/TP	
		R104	0RH8202D622	RESISTOR CHIP	82K 1/10W 5 D.R/TP	
		R105	0RH4703D622	RESISTOR CHIP	470K 1/10W 5 D.R/TP	
		R106	0RH1003D622	RESISTOR CHIP	100K 1/10W 5 D.R/TP	
		R107	0RH0102D622	RESISTOR CHIP	10 1/10W 5 D.R/TP	
		R108	0RH0222D622	RESISTOR CHIP	22 1/10W 5 D.R/TP	
		R109	0RH3302D622	RESISTOR CHIP	33K 1/10W 5 D.R/TP	
		R110	0RH0332D622	RESISTOR CHIP	33 1/10W 5 D.R/TP	
		R111	0RH0000D622	RESISTOR CHIP	0 1/10W 5 D.R/TP	
		R112	0RH0222D622	RESISTOR CHIP	22 1/10W 5 D.R/TP	
		R113	0RH3302D622	RESISTOR CHIP	33K 1/10W 5 D.R/TP	
		R114	0RH1801D622	RESISTOR CHIP	1.8K 1/10W 5 D.R/TP	
		R115	0RH0562D622	RESISTOR,CHIP	56 1/10W 5 D.R/TP	
		R116	0RH3300D622	RESISTOR CHIP	330 1/10W 5 D.R/TP	
		R117	0RH1000D622	RESISTOR CHIP	100 1/10W 5 D.R/TP	
		R118	0RH1803D622	RESISTOR CHIP	180K 1/10W 5 D.R/TP	
		R119	0RH1202D622	RESISTOR CHIP	12K 1/10W 5 D.R/TP	
		R120	0RH1502D622	RESISTOR CHIP	15K 1/10W 5 D.R/TP	
		R121	0RH3303D622	RESISTOR CHIP	330K 1/10W 5 D.R/TP	
		R122	0RH4702D622	RESISTOR CHIP	47K 1/10W 5 D.R/TP	
		R123	0RH1502D622	RESISTOR CHIP	15K 1/10W 5 D.R/TP	

MODEL : TCH-55 BR9 SET PART NO : 112-055I RUN-DATE : 92.08.18

S	AL	LOCA.NO	PART NO(GS)	DESCRIPTION	SPECIFICATION	REMARKS
		R124	0RH4702D622	RESISTOR CHIP	47K 1/10W 5 D.R/TP	
		R125	0RH1003D622	RESISTOR CHIP	100K 1/10W 5 D.R/TP	
		R126	0RH1802D622	RESISTOR CHIP	18K 1/10W 5 D.R/TP	
		R127	0RH2202D622	RESISTOR CHIP	22K 1/10W 5 D.R/TP	
		R128	0RH4701D622	RESISTOR CHIP	4.7K 1/10W 5 D.R/TP	
		R129	0RH4702D622	RESISTOR CHIP	47K 1/10W 5 D.R/TP	
		R130	0RH1001D622	RESISTOR CHIP	1.0K 1/10W 5 D.R/TP	
		R131	0RH3902D622	RESISTOR,CHIP	39K 1/10W 5 D.R/TP	
		R132	0RH5601D622	RESISTOR CHIP	5.6K 1/10W 5 D.R/TP	
		R133	0RH4702D622	RESISTOR CHIP	47K 1/10W 5 D.R/TP	
		R134	0RH6801D622	RESISTOR CHIP	6.8K 1/10W 5 D.R/TP	
		R135	0RH6801D622	RESISTOR CHIP	6.8K 1/10W 5 D.R/TP	
		R136	0RH1001D622	RESISTOR CHIP	1.0K 1/10W 5 D.R/TP	
		R137	0RH0222D622	RESISTOR CHIP	22 1/10W 5 D.R/TP	
		R138	0RH8201D622	RESISTOR CHIP	8.2K 1/10W 5 D.R/TP	
		R151	0RH0000D622	RESISTOR CHIP	0 1/10W 5 D.R/TP	
		R152	0RH0000D622	RESISTOR CHIP	0 1/10W 5 D.R/TP	
		R153	0RH0000D622	RESISTOR CHIP	0 1/10W 5 D.R/TP	
		R154	0RH0000D622	RESISTOR CHIP	0 1/10W 5 D.R/TP	
		R156	0RH0000D622	RESISTOR CHIP	0 1/10W 5 D.R/TP	
		R157	0RH0000D622	RESISTOR CHIP	0 1/10W 5 D.R/TP	
		R158	0RH0000D622	RESISTOR CHIP	0 1/10W 5 D.R/TP	
		R161	0RH0000D622	RESISTOR CHIP	0 1/10W 5 D.R/TP	
		R162	0RH0000D622	RESISTOR CHIP	0 1/10W 5 D.R/TP	
		R163	0RH0000D622	RESISTOR CHIP	0 1/10W 5 D.R/TP	
		R164	0RH0000D622	RESISTOR CHIP	0 1/10W 5 D.R/TP	
		R165	0RH0000D622	RESISTOR CHIP	0 1/10W 5 D.R/TP	
		R166	0RH0000D622	RESISTOR CHIP	0 1/10W 5 D.R/TP	
		R167	0RH0000D622	RESISTOR CHIP	0 1/10W 5 D.R/TP	
		R201	0RH5602D622	RESISTOR CHIP	56K 1/10W 5 D.R/TP	
		R202	0RH5600D622	RESISTOR CHIP	560 1/10W 5 D.R/TP	
		R203	0RH1003D622	RESISTOR CHIP	100K 1/10W 5 D.R/TP	
		R204	0RH0332D622	RESISTOR CHIP	33 1/10W 5 D.R/TP	
		R205	0RH1803D622	RESISTOR CHIP	180K 1/10W 5 D.R/TP	
		R206	0RH1002D622	RESISTOR CHIP	10K 1/10W 5 D.R/TP	
		R207	0RH1003D622	RESISTOR CHIP	100K 1/10W 5 D.R/TP	
		R208	0RH2201D622	RESISTOR CHIP	2.2K 1/10W 5 D.R/TP	
		R209	0RH4702D622	RESISTOR CHIP	47K 1/10W 5 D.R/TP	
		R210	0RH4703D622	RESISTOR CHIP	470K 1/10W 5 D.R/TP	
		R211	0RH4702D622	RESISTOR CHIP	47K 1/10W 5 D.R/TP	
		R400	0RD1002F608	RESISTOR,FIXED CARBON FILM	10K 1/6W 5 TA26	
		R401	0RD1001F608	RESISTOR,FIXED CARBON FILM	1.0K 1/6W 5 TA26	
		R402	0RD1001F608	RESISTOR,FIXED CARBON FILM	1.0K 1/6W 5 TA26	
		R403	0RD1001F608	RESISTOR,FIXED CARBON FILM	1.0K 1/6W 5 TA26	
		R404	0RD1001F608	RESISTOR,FIXED CARBON FILM	1.0K 1/6W 5 TA26	
		R407	0RD4701F608	RESISTOR,FIXED CARBON FILM	4.7K 1/6W 5 TA26	
		R408	0RD6801F608	RESISTOR,FIXED CARBON FILM	6.8K 1/6W 5 TA26	
		R409	0RD1001F608	RESISTOR,FIXED CARBON FILM	1.0K 1/6W 5 TA26	
		R410	0RD8202F608	RESISTOR,FIXED CARBON FILM	82K 1/6W 5 TA26	
		R411	0RD1203F608	RESISTOR,FIXED CARBON FILM	120K 1/6W 5 TA26	

[REPLACEMENT PARTS LIST]

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S	AL	LOCA.NO	PART NO(GS)	DESCRIPTION	SPECIFICATION	REMARKS
		R412	0RD1002F608	RESISTOR,FIXED CARBON FILM	10K 1/6W 5 TA26	
		R413	0RD1002F608	RESISTOR,FIXED CARBON FILM	10K 1/6W 5 TA26	
		R414	0RD1001F608	RESISTOR,FIXED CARBON FILM	1.0K 1/6W 5 TA26	
		R416	0RD1002F608	RESISTOR,FIXED CARBON FILM	10K 1/6W 5 TA26	
		R417	0RD1002F608	RESISTOR,FIXED CARBON FILM	10K 1/6W 5 TA26	
		R418	0RD2201F608	RESISTOR,FIXED CARBON FILM	2.2K 1/6W 5 TA26	
		R420	0RD1002F608	RESISTOR,FIXED CARBON FILM	10K 1/6W 5 TA26	
		R422	0RD0681F608	RESISTOR,FIXED CARBON FILM	6.8 1/6W 5 TA26	
		R423	0RD8200F608	RESISTOR,FIXED CARBON FILM	820 1/6W 5 TA26	
		R424	0RD1000F608	RESISTOR,FIXED CARBON FILM	100 1/6W 5 TA26	
		R425	0RD4702F608	RESISTOR,FIXED CARBON FILM	47K 1/6W 5 TA26	
		R426	0RD0102F608	RESISTOR,FIXED CARBON FILM	10 1/6W 5 TA26	
		R427	0RD1002F608	RESISTOR,FIXED CARBON FILM	10K 1/6W 5 TA26	
		R430	0RD4700F608	RESISTOR,FIXED CARBON FILM	470 1/6W 5 TA26	
		R431	0RD0102F608	RESISTOR,FIXED CARBON FILM	10 1/6W 5 TA26	
		R432	0RD4700F608	RESISTOR,FIXED CARBON FILM	470 1/6W 5 TA26	
		R433	0RD0102F608	RESISTOR,FIXED CARBON FILM	10 1/6W 5 TA26	
		R434	0RD0221F608	RESISTOR,FIXED CARBON FILM	2.2 1/6W 5 TA26	
		R435	0RD4702F608	RESISTOR,FIXED CARBON FILM	47K 1/6W 5 TA26	
		R436	0RD4702F608	RESISTOR,FIXED CARBON FILM	47K 1/6W 5 TA26	
		R437	0RD4702F608	RESISTOR,FIXED CARBON FILM	47K 1/6W 5 TA26	
		R438	0RD4702F608	RESISTOR,FIXED CARBON FILM	47K 1/6W 5 TA26	
		R439	0RD4702F608	RESISTOR,FIXED CARBON FILM	47K 1/6W 5 TA26	
		R440	0RD4702F608	RESISTOR,FIXED CARBON FILM	47K 1/6W 5 TA26	
		R441	0RD4702F608	RESISTOR,FIXED CARBON FILM	47K 1/6W 5 TA26	
		R442	0RD2203F608	RESISTOR,FIXED CARBON FILM	220K 1/6W 5 TA26	
		R443	0RD2203F608	RESISTOR,FIXED CARBON FILM	220K 1/6W 5 TA26	
		R444	0RD2203F608	RESISTOR,FIXED CARBON FILM	220K 1/6W 5 TA26	
		R445	0RD2203F608	RESISTOR,FIXED CARBON FILM	220K 1/6W 5 TA26	
		R446	0RD2203F608	RESISTOR,FIXED CARBON FILM	220K 1/6W 5 TA26	
		R447	0RD2203F608	RESISTOR,FIXED CARBON FILM	220K 1/6W 5 TA26	
		R448	0RD2203F608	RESISTOR,FIXED CARBON FILM	220K 1/6W 5 TA26	
		R449	0RD2203F608	RESISTOR,FIXED CARBON FILM	220K 1/6W 5 TA26	
		R451	0RD1002F608	RESISTOR,FIXED CARBON FILM	10K 1/6W 5 TA26	
		R452	0RD8201F608	RESISTOR,FIXED CARBON FILM	8.2K 1/6W 5 TA26	
		R455	0RH4702D622	RESISTOR CHIP	47K 1/10W 5 D.R/TP	
		R458	0RD6801F608	RESISTOR,FIXED CARBON FILM	6.8K 1/6W 5 TA26	
		R600	0RD0102F608	RESISTOR,FIXED CARBON FILM	10 1/6W 5 TA26	
		R601	0RD2202F608	RESISTOR,FIXED CARBON FILM	22K 1/6W 5 TA26	
		R602	0RD1001F608	RESISTOR,FIXED CARBON FILM	1.0K 1/6W 5 TA26	
		R603	0RD1502F608	RESISTOR,FIXED CARBON FILM	15K 1/6W 5 TA26	
		R604	0RD1502F608	RESISTOR,FIXED CARBON FILM	15K 1/6W 5 TA26	
		R605	0RD1502F608	RESISTOR,FIXED CARBON FILM	15K 1/6W 5 TA26	
		R606	0RD1001F608	RESISTOR,FIXED CARBON FILM	1.0K 1/6W 5 TA26	
		R607	0RD1001F608	RESISTOR,FIXED CARBON FILM	1.0K 1/6W 5 TA26	
		R610	0RD6802F608	RESISTOR,FIXED CARBON FILM	68K 1/6W 5 TA26	
		R611	0RD1503F608	RESISTOR,FIXED CARBON FILM	150K 1/6W 5 TA26	
		R612	0RD2703F608	RESISTOR,FIXED CARBON FILM	270K 1/6W 5 TA26	
		R613	0RD3302F608	RESISTOR,FIXED CARBON FILM	33K 1/6W 5 TA26	
		R614	0RD1003F608	RESISTOR,FIXED CARBON FILM	100K 1/6W 5 TA26	

S	AL	LOCA.NO	PART NO(GS)	DESCRIPTION	SPECIFICATION	REMARKS
		R615	0RD8201F608	RESISTOR,FIXED CARBON FILM	8.2K 1/6W 5 TA26	
		R616	0RD1003F608	RESISTOR,FIXED CARBON FILM	100K 1/6W 5 TA26	
		R617	0RD5103F608	RESISTOR,FIXED CARBON FILM	510K 1/6W 5 TA26	
		R618	0RD1002F608	RESISTOR,FIXED CARBON FILM	10K 1/6W 5 TA26	
		R619	0RD1003F608	RESISTOR,FIXED CARBON FILM	100K 1/6W 5 TA26	
		R620	0RD1002F608	RESISTOR,FIXED CARBON FILM	10K 1/6W 5 TA26	
		R621	0RD2203F608	RESISTOR,FIXED CARBON FILM	220K 1/6W 5 TA26	
		R622	0RD1801F608	RESISTOR,FIXED CARBON FILM	1.8K 1/6W 5 TA26	
		R623	0RD1004F608	RESISTOR,FIXED CARBON FILM	1.0M 1/6W 5 TA26	
		R624	0RD2202F608	RESISTOR,FIXED CARBON FILM	22K 1/6W 5 TA26	
		R625	0RD4702F608	RESISTOR,FIXED CARBON FILM	47K 1/6W 5 TA26	
		R626	0RD1503F608	RESISTOR,FIXED CARBON FILM	150K 1/6W 5 TA26	
		R627	0RD3902F608	RESISTOR,FIXED CARBON FILM	39K 1/6W 5 TA26	
		R628	0RD0221F608	RESISTOR,FIXED CARBON FILM	2.2 1/6W 5 TA26	
		R629	0RD0101F608	RESISTOR,FIXED CARBON FILM	1.0 1/6W 5 TA26	
		R630	0RD3302F608	RESISTOR,FIXED CARBON FILM	33K 1/6W 5 TA26	
		R631	0RD3302F608	RESISTOR,FIXED CARBON FILM	33K 1/6W 5 TA26	
		R632	0RD1802F608	RESISTOR,FIXED CARBON FILM	18K 1/6W 5 TA26	
		R633	0RD3302F608	RESISTOR,FIXED CARBON FILM	33K 1/6W 5 TA26	
		R634	0RD3302F608	RESISTOR,FIXED CARBON FILM	33K 1/6W 5 TA26	
		R635	0RD3302F608	RESISTOR,FIXED CARBON FILM	33K 1/6W 5 TA26	
		R636	0RD3302F608	RESISTOR,FIXED CARBON FILM	33K 1/6W 5 TA26	
		R637	0RD1202F608	RESISTOR,FIXED CARBON FILM	12K 1/6W 5 TA26	
		R638	0RD3302F608	RESISTOR,FIXED CARBON FILM	33K 1/6W 5 TA26	
		R639	0RD3302F608	RESISTOR,FIXED CARBON FILM	33K 1/6W 5 TA26	
		R640	0RD4700F608	RESISTOR,FIXED CARBON FILM	470 1/6W 5 TA26	
		R641	0RD4702F608	RESISTOR,FIXED CARBON FILM	47K 1/6W 5 TA26	
		R642	0RD4702F608	RESISTOR,FIXED CARBON FILM	47K 1/6W 5 TA26	
		R643	0RD4702F608	RESISTOR,FIXED CARBON FILM	47K 1/6W 5 TA26	
		R644	0RD5602F608	RESISTOR,FIXED CARBON FILM	56K 1/6W 5 TA26	
		R645	0RD1001F608	RESISTOR,FIXED CARBON FILM	1.0K 1/6W 5 TA26	
		R646	0RD1002F608	RESISTOR,FIXED CARBON FILM	10K 1/6W 5 TA26	
		R647	0RD4702F608	RESISTOR,FIXED CARBON FILM	47K 1/6W 5 TA26	
		R648	0RD1002F608	RESISTOR,FIXED CARBON FILM	10K 1/6W 5 TA26	
		R649	0RD4702F608	RESISTOR,FIXED CARBON FILM	47K 1/6W 5 TA26	
		R650	0RD4700F608	RESISTOR,FIXED CARBON FILM	470 1/6W 5 TA26	
		R651	0RD4700F608	RESISTOR,FIXED CARBON FILM	470 1/6W 5 TA26	
		R652	0RD1002F608	RESISTOR,FIXED CARBON FILM	10K 1/6W 5 TA26	
		R653	0RD1001F608	RESISTOR,FIXED CARBON FILM	1.0K 1/6W 5 TA26	
		R654	0RD1002F608	RESISTOR,FIXED CARBON FILM	10K 1/6W 5 TA26	
		R700	0RD1803F608	RESISTOR,FIXED CARBON FILM	180K 1/6W 5 TA26	
		R701	0RD1000F608	RESISTOR,FIXED CARBON FILM	100 1/6W 5 TA26	
		R702	0RD8201F608	RESISTOR,FIXED CARBON FILM	8.2K 1/6W 5 TA26	
		R703	0RD1001F608	RESISTOR,FIXED CARBON FILM	1.0K 1/6W 5 TA26	
		R704	0RD1001F608	RESISTOR,FIXED CARBON FILM	1.0K 1/6W 5 TA26	
		R707	0RD1201F608	RESISTOR,FIXED CARBON FILM	1.2K 1/6W 5 TA26	
		R710	0RD1003F608	RESISTOR,FIXED CARBON FILM	100K 1/6W 5 TA26	
		R711	0RD1202F608	RESISTOR,FIXED CARBON FILM	12K 1/6W 5 TA26	
		R712	0RD1003F608	RESISTOR,FIXED CARBON FILM	100K 1/6W 5 TA26	
		R713	0RN1003F408	RESISTOR FIX METAL FILM	100K 1/6W 1 TA26	

「REPLACEMENT PARTS LIST」

MODEL : TCH-55 BR9 SET PART NO : 112-055I RUN-DATE : 92.08.18

S	AL	LOCA.NO	PART NO(GS)	DESCRIPTION	SPECIFICATION	REMARKS
		R714	0RN1003F408	RESISTOR FIX METAL FILM	100K 1/6W 1 TA26	
		R715	0RD1002F608	RESISTOR,FIXED CARBON FILM	10K 1/6W 5 TA26	
		R716	0RD1004F608	RESISTOR,FIXED CARBON FILM	1.0M 1/6W 5 TA26	
		R717	0RD1002F608	RESISTOR,FIXED CARBON FILM	10K 1/6W 5 TA26	
		R718	0RD1002F608	RESISTOR,FIXED CARBON FILM	10K 1/6W 5 TA26	
		R719	0RD1002F608	RESISTOR,FIXED CARBON FILM	10K 1/6W 5 TA26	
		R720	0RD1002F608	RESISTOR,FIXED CARBON FILM	10K 1/6W 5 TA26	
		R750	0RD1803F608	RESISTOR,FIXED CARBON FILM	180K 1/6W 5 TA26	
		R752	0RD8201F608	RESISTOR,FIXED CARBON FILM	8.2K 1/6W 5 TA26	
		R753	0RD1001F608	RESISTOR,FIXED CARBON FILM	1.0K 1/6W 5 TA26	
		R800	0RD2702F608	RESISTOR,FIXED CARBON FILM	27K 1/6W 5 TA26	
		R801	0RD1802F608	RESISTOR,FIXED CARBON FILM	18K 1/6W 5 TA26	
		R802	0RD1801F608	RESISTOR,FIXED CARBON FILM	1.8K 1/6W 5 TA26	
		R803	0RD1001F608	RESISTOR,FIXED CARBON FILM	1.0K 1/6W 5 TA26	
		R804	0RD3303F608	RESISTOR,FIXED CARBON FILM	330K 1/6W 5 TA26	
		R805	0RD0472F608	RESISTOR,FIXED CARBON FILM	47 1/6W 5 TA26	
		R806	0RD2201F608	RESISTOR,FIXED CARBON FILM	2.2K 1/6W 5 TA26	
		R807	0RD2202F608	RESISTOR,FIXED CARBON FILM	22K 1/6W 5 TA26	
		R808	0RD1201F608	RESISTOR,FIXED CARBON FILM	1.2K 1/6W 5 TA26	
		R809	0RD1002F608	RESISTOR,FIXED CARBON FILM	10K 1/6W 5 TA26	
		R810	0RD1001F608	RESISTOR,FIXED CARBON FILM	1.0K 1/6W 5 TA26	
		R811	0RD1000F608	RESISTOR,FIXED CARBON FILM	100 1/6W 5 TA26	
		R812	0RD3301F608	RESISTOR,FIXED CARBON FILM	3.3K 1/6W 5 TA26	
		R813	0RD4701F608	RESISTOR,FIXED CARBON FILM	4.7K 1/6W 5 TA26	
		R814	0RD1000F608	RESISTOR,FIXED CARBON FILM	100 1/6W 5 TA26	
		R815	0RD0221F608	RESISTOR,FIXED CARBON FILM	2.2 1/6W 5 TA26	
		R816	0RD0221F608	RESISTOR,FIXED CARBON FILM	2.2 1/6W 5 TA26	
		R817	0RD1001F608	RESISTOR,FIXED CARBON FILM	1.0K 1/6W 5 TA26	
		R818	0RD1003F608	RESISTOR,FIXED CARBON FILM	100K 1/6W 5 TA26	
		R819	0RD5601F608	RESISTOR,FIXED CARBON FILM	5.6K 1/6W 5 TA26	
		R820	0RD3903F608	RESISTOR,FIXED CARBON FILM	390K 1/6W 5 TA26	
		R821	0RD1001F608	RESISTOR,FIXED CARBON FILM	1.0K 1/6W 5 TA26	
		R822	0RD3300F608	RESISTOR,FIXED CARBON FILM	330 1/6W 5 TA26	
		R823	0RD2203F608	RESISTOR,FIXED CARBON FILM	220K 1/6W 5 TA26	
		R824	0RD1001F608	RESISTOR,FIXED CARBON FILM	1.0K 1/6W 5 TA26	
		R825	0RD4700F608	RESISTOR,FIXED CARBON FILM	470 1/6W 5 TA26	
		R826	0RD3301F608	RESISTOR,FIXED CARBON FILM	3.3K 1/6W 5 TA26	
		R828	0RD1801F608	RESISTOR,FIXED CARBON FILM	1.8K 1/6W 5 TA26	
		R829	0RD4702F608	RESISTOR,FIXED CARBON FILM	47K 1/6W 5 TA26	
		R850	0RD2702F608	RESISTOR,FIXED CARBON FILM	27K 1/6W 5 TA26	
		R851	0RD1802F608	RESISTOR,FIXED CARBON FILM	18K 1/6W 5 TA26	
		R852	0RD1801F608	RESISTOR,FIXED CARBON FILM	1.8K 1/6W 5 TA26	
		R853	0RD1001F608	RESISTOR,FIXED CARBON FILM	1.0K 1/6W 5 TA26	
		R854	0RD3303F608	RESISTOR,FIXED CARBON FILM	330K 1/6W 5 TA26	
		R855	0RD0472F608	RESISTOR;FIXED CARBON FILM	47 1/6W 5 TA26	
		R856	0RD2201F608	RESISTOR,FIXED CARBON FILM	2.2K 1/6W 5 TA26	
		R857	0RD2202F608	RESISTOR,FIXED CARBON FILM	22K 1/6W 5 TA26	
		R858	0RD1201F608	RESISTOR,FIXED CARBON FILM	1.2K 1/6W 5 TA26	
		R861	0RD1000F608	RESISTOR,FIXED CARBON FILM	100 1/6W 5 TA26	
		R865	0RD0221F608	RESISTOR,FIXED CARBON FILM	2.2 1/6W 5 TA26	

[REPLACEMENT PARTS LIST] P A G E : 14

MODEL : TCH-55 BR9 SET PART NO : 112-055I RUN-DATE : 92.08.18

S	AL	LOCA.NO	PART NO(GS)	DESCRIPTION	SPECIFICATION	REMARKS
		R866	0RD0221F608	RESISTOR,FIXED CARBON FILM	2.2 1/6W 5 TA26	
		R870	0RD3903F608	RESISTOR,FIXED CARBON FILM	390K 1/6W 5 TA26	
		R871	0RD1001F608	RESISTOR,FIXED CARBON FILM	1.0K 1/6W 5 TA26	
		R872	0RD3300F608	RESISTOR,FIXED CARBON FILM	330 1/6W 5 TA26	
		R873	0RD2203F608	RESISTOR,FIXED CARBON FILM	220K 1/6W 5 TA26	
		R874	0RD1001F608	RESISTOR,FIXED CARBON FILM	1.0K 1/6W 5 TA26	
		R875	0RD4700F608	RESISTOR,FIXED CARBON FILM	470 1/6W 5 TA26	
		R876	0RD3301F608	RESISTOR,FIXED CARBON FILM	3.3K 1/6W 5 TA26	
		R878	0RD1801F608	RESISTOR,FIXED CARBON FILM	1.8K 1/6W 5 TA26	
		R879	0RD4702F608	RESISTOR,FIXED CARBON FILM	47K 1/6W 5 TA26	
		R902	0RD1002F608	RESISTOR,FIXED CARBON FILM	10K 1/6W 5 TA26	
		R916	0RD1001F608	RESISTOR,FIXED CARBON FILM	1.0K 1/6W 5 TA26	
		R917	0RD5602F608	RESISTOR,FIXED CARBON FILM	56K 1/6W 5 TA26	
		R918	0RD5602F608	RESISTOR,FIXED CARBON FILM	56K 1/6W 5 TA26	
		R919	0RD2201F608	RESISTOR,FIXED CARBON FILM	2.2K 1/6W 5 TA26	
		R922	0RD1003F608	RESISTOR,FIXED CARBON FILM	100K 1/6W 5 TA26	
		R923	0RD2201F608	RESISTOR,FIXED CARBON FILM	2.2K 1/6W 5 TA26	
		R924	0RD4701F608	RESISTOR,FIXED CARBON FILM	4.7K 1/6W 5 TA26	
		SW401	558T026C	SWITCH SPECIAL	TACT EVQ-PJH 04K H=4.3 TP	
		SW402	558T026C	SWITCH SPECIAL	TACT EVQ-PJH 04K H=4.3 TP	
		SW403	558T026C	SWITCH SPECIAL	TACT EVQ-PJH 04K H=4.3 TP	
		SW404	558T026C	SWITCH SPECIAL	TACT EVQ-PJH 04K H=4.3 TP	
		SW405	558T026C	SWITCH SPECIAL	TACT EVQ-PJH 04K H=4.3 TP	
		SW406	558T026C	SWITCH SPECIAL	TACT EVQ-PJH 04K H=4.3 TP	
		SW407	558T026C	SWITCH SPECIAL	TACT EVQ-PJH 04K H=4.3 TP	
		SW408	558T026C	SWITCH SPECIAL	TACT EVQ-PJH 04K H=4.3 TP	
		SW409	558T026C	SWITCH SPECIAL	TACT EVQ-PJH 04K H=4.3 TP	
		SW410	558T026C	SWITCH SPECIAL	TACT EVQ-PJH 04K H=4.3 TP	
		SW411	558T026C	SWITCH SPECIAL	TACT EVQ-PJH 04K H=4.3 TP	
		SW412	558T026C	SWITCH SPECIAL	TACT EVQ-PJH 04K H=4.3 TP	
		SW413	558T026C	SWITCH SPECIAL	TACT EVQ-PJH 04K H=4.3 TP	
		SW414	558T026C	SWITCH SPECIAL	TACT EVQ-PJH 04K H=4.3 TP	
		SW415	558T026C	SWITCH SPECIAL	TACT EVQ-PJH 04K H=4.3 TP	
		SW416	558T026C	SWITCH SPECIAL	TACT EVQ-PJH 04K H=4.3 TP	
		SW417	558T026C	SWITCH SPECIAL	TACT EVQ-PJH 04K H=4.3 TP	
		SW418	558T026C	SWITCH SPECIAL	TACT EVQ-PJH 04K H=4.3 TP	
		SW419	558T026C	SWITCH SPECIAL	TACT EVQ-PJH 04K H=4.3 TP	
		TH601	655-005F	THERMISTOR	PTH59F04BH222TS MURATA	
		T101	644-030D	TRANS	FM IF,218AC-K6029N.TOKO	
		T102	647-011S	DISCRIMINATOR	DISC,D2911AC-K5345DLE-KR,TOKO	
		T201	631-609M	COIL ANTENNA	MW RF,5PNR-K5068N,TOKO	
		T202	631-609N	COIL ANTENNA	MW RF,5PNR-K5069X,TOKO	
		T203	634-038Q	COIL OSCILLATOR	MW OSC,5PNR-K5013Y-KR,TOKO	
		T204	644-030B	TRANS	MW IF,5PLC-K5014N-KR,TOKO	
		T205	644-030C	TRANS	MW IF,5PLC-K5015N-KR,TOKO	
		VD101	0DD141009AA	DIODE	KV1410TR00,FM VVC,TOKO-J	
		VD102	0DD141009AA	DIODE	KV1410TR00,FM VVC,TOKO-J	
		VD103	0DD141009AA	DIODE	KV1410TR00,FM VVC,TOKO-J	
		VD201	0DD354009AA	DIODE	SVC354T TAPING SANYO	
		VR101	613T011B	RESISTOR SEMI-FIXED	EVM 1SS X50 B14 CHIP SEMI	

[REPLACEMENT PARTS LIST]

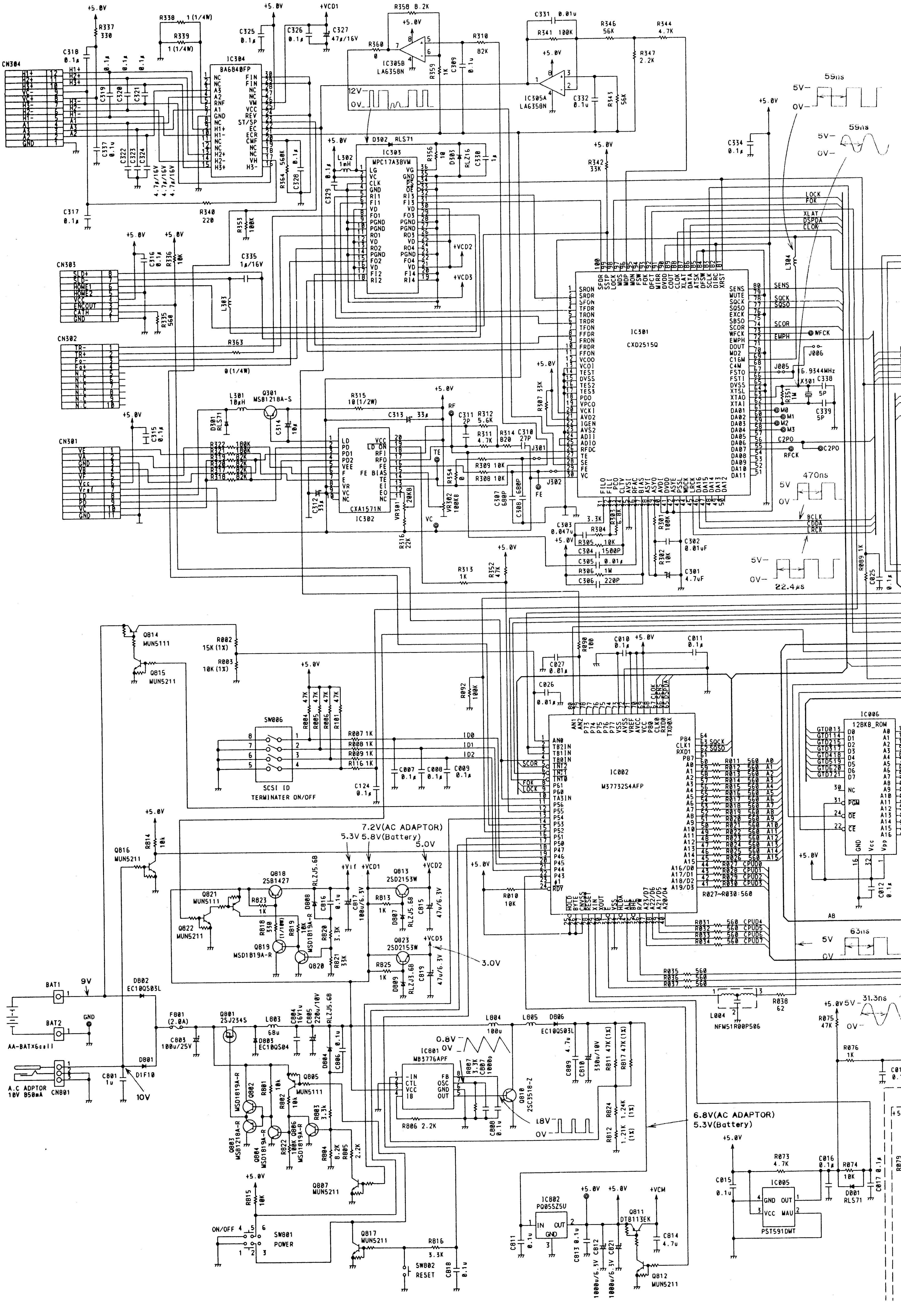
MODEL : TCH-55 BR9 SET PART NO : 112-055I RUN-DATE : 92.08.18

S	AL	LOCA.NO	PART NO(GS)	DESCRIPTION	SPECIFICATION	REMARKS
		VR600	613T011C	RESISTOR SEMI-FIXED	EVM 1SS X50 BE4 CHIP SEMI	
		VR601	613T011D	RESISTOR SEMI-FIXED	EVM 1SS X50 BQ4 CHIP SEMI	
		VR602	613T011C	RESISTOR SEMI-FIXED	EVM 1SS X50 BE4 CHIP SEMI	
		VR603	613-008B	RESISTOR SEMI-FIXED	EVN-D8AA02 B13(1KB) (S)	
		VR604	613T011C	RESISTOR SEMI-FIXED	EVM 1SS X50 BE4 CHIP SEMI	
		VR800	611-657P	RESISTOR VARIABLLE	NOT USE,EVU-W9BS04092 MAIN	
		VR802	611-657Q	RESISTOR VARIABLLE	NOT USE,EVU-4XA203A54 50KAX4	
		X400	616-020Q	FILTER CERAMIC	CSA4.19MG,MURATA	
		X401	617T602D	CRYSTAL	7.2MHZ	
		X700	616-020X	FILTER CERAMIC	CSA16.93MX040,MURATA	
		ZD101	0DZ470009FA	DIODE,ZENER	Z02W4.7-X SOT-23 TP,KEC	
		ZD401	0DZ910009EE	DIODE,ZENER	MTZ9.1C-T-77 ROHM-K	
		ZD403	0DZ560009FA	DIODE,ZENER	MTZ5.6-B T-77 5.6V TP,ROHM/K	
		ZD404	0DZ620009EA	DIODE,ZENER	MTZ6.2-B T-77 6.2V TP,ROHM/K	
		ZD602	0DZ560009FA	DIODE,ZENER	MTZ5.6-B T-77 5.6V TP,ROHM/K	
		ZD600	0DZ560009FA	DIODE,ZENER	MTZ5.6-B T-77 5.6V TP,ROHM/K	
		ZD601	0DZ680009CC	DIODE,ZENER	MTZ6.8C-T-77 ROHM-K	

*** END OF DATA ***

10.3 Schematic Diagram

10.3.1 Main/Sub Board Schematic Diagram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Q301 MSB1218A-S
D302 RLS71
L302 1mH
X301 16.9344MHz
59ns
470ns
22.4µs
Q814 MUN5111
Q815 MUN5211
SW806
SCSI ID
TERMINATER ON/OFF
IC802 M37732S4AFP
IC006 128KB ROM
7.2V(AC ADAPTOR)
5.3V 5.8V(Battery)
5.0V
3.0V
Q816 MUN5211
Q818 2SB1427
Q821 MUN5111
Q822 MUN5211
Q819 MSD1819A-R
Q820
Q813 2SD2153W
Q823 2SD2153W
BAT1
BAT2
AA-BATx6cell
A.C ADPTOR 10V 850mA
CN801
9V
10V
GND
D802 EC10QS03L
D801 D1F10
F801 (2.0A)
Q801 2SJ234S
IC801 MB3776APF
Q810 2SC3518-Z
0.8V
18V
6.8V(AC ADAPTOR)
5.3V(Battery)
IC802 PQ05SZ5U
Q811 DTB113EK
Q812 MUN5211
IC005 PST591DMT
SW801 POWER
ON/OFF
Q817 MUN5211
SW802 RESET
Q807 MUN5211
Q805 MUN5111
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Q804 MSD1819A-R
Q806 MSD1819A-R
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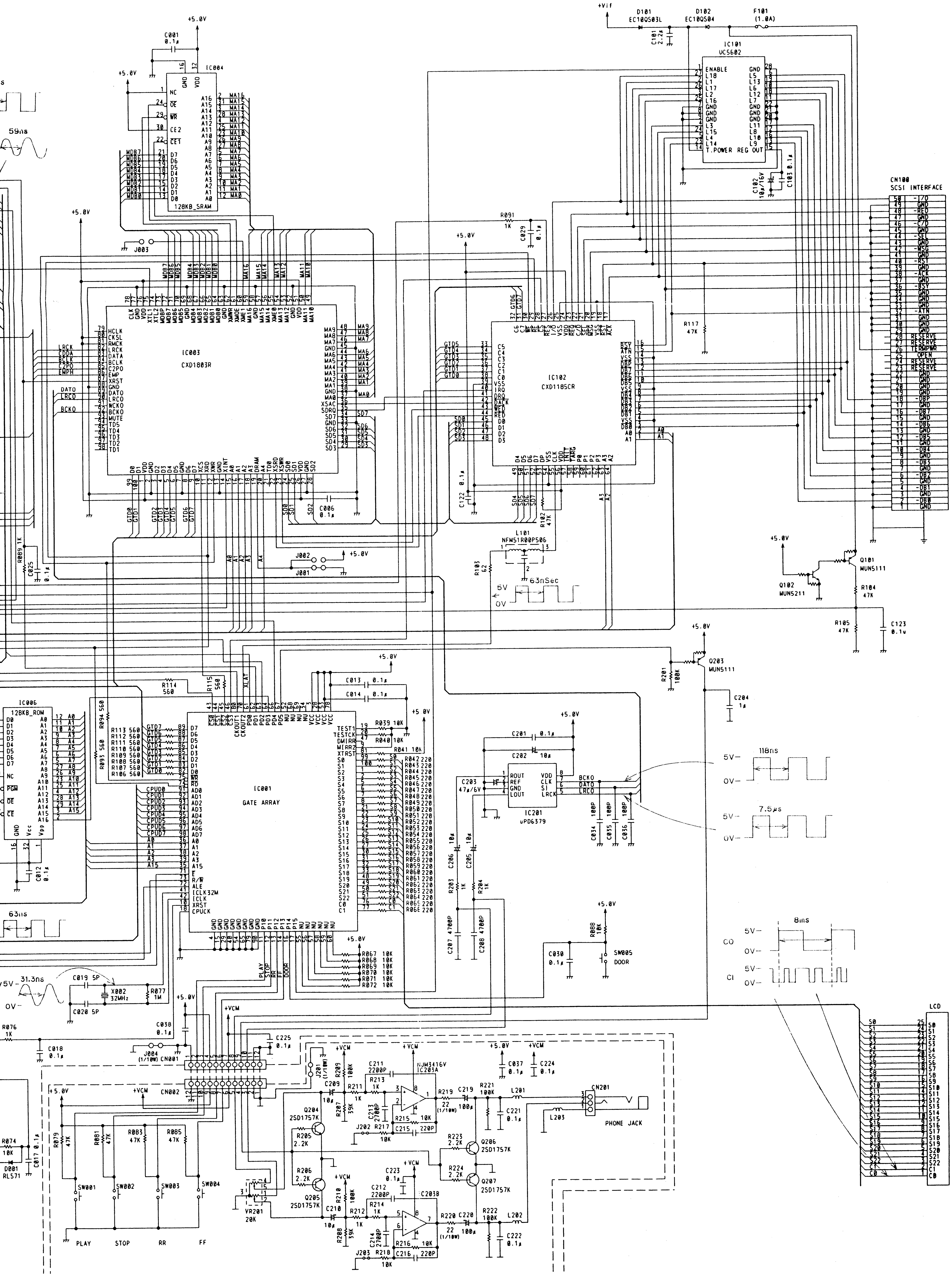
31.3ns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J001
R089 1K
C025 0.1µ
R114 560
R115 560
R094 560
R093 560
IC001
GATE ARRAY
C013 0.1µ
C014 0.1µ
R039 10K
R040 10K
R041 10K
C012 0.1µ
X002 32MHz
C019 5P
C020 5P
R077 1M
R076 1K
C018 0.1µ
C038 0.1µ
J004 (1/10W)
CN001
CN002
C225 0.1µ
R074 10K
C017 0.1µ
D001 RLS71
R079 47K
R081 47K
R083 47K
R085 47K
SW001
SW002
SW003
SW004
PLAY
STOP
RR
FF
DOOR
R067 10K
R068 10K
R069 10K
R070 10K
R071 10K
R072 10K
+VCM
VR201 20K
R209 100K
J201 (1/10W)
C209 10µ
R211 1K
R213 1K
C211 2200P
NJM3416V IC203A
R207 39K
C213 2700P
R217 10K
R215 10K
C215 220P
J202
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C216 220P
J203
C223 0.1µ
R219 22 (1/10W)
C219 100µ
R221 100K
L201
C221 0.1µ
R223 2.2K
R224 2.2K
Q206 2SD1757K
Q207 2SD1757K
R220 22 (1/10W)
C220 100µ
R222 100K
L202
C222 0.1µ
C037 0.1µ
C224 0.1µ
CN201
L203
PHONE JACK
+Vif
D101 EC10QS03L
D102 EC10QS04
F101 (1.0A)
C101 2.2µ
IC101
UC5602
ENABLE
T.POWER REG OUT
C102 10µ/16V
C103 0.1µ
CN100
SCSI INTERFACE
R091 1K
C029 0.1µ
IC102
CXD1185CR
R117 47K
C122 0.1µ
R102 47K
L101
NFM51R00P506
R103 62
63nSec
5V
0V
Q101 MUN5111
Q102 MUN5211
R104 47K
R105 47K
C123 0.1u
Q203 MUN5111
R201 100K
C204 1µ
C201 0.1µ
C202 10µ
C203 47µ/6V
IC201
µPD6379
BCKO
DATO
LRCO
C034 100P
C035 100P
C036 100P
C206 10µ
C205 10µ
R203 1K
R204 1K
C207 4700P
C208 4700P
118ns
7.5µs
R088 10K
C030 0.1µ
SW005 DOOR
8ms
C0
C1
LCD
59ns
63ns
31.3ns